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Deep Roots In Eroding Soil: Building Decolonial Resilience Amidst Climate Violence And Displacement In A Louisiana Bayou Indigenous Community

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By

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Abstract

The Pointe-au-Chien Indigenous community of coastal Louisiana is fighting for survival as climate change and socio-political factors threaten to displace them from their ancestral home. This project takes an ethnographic and historical approach to exploring how colonization and climate change have influenced Pointe-au-Chien tribal members' ability to stay on their ancestral land. Climate projections estimate that the bayou this community has lived alongside of for generations will soon be unrecognizable, leading to potential displacement and devastating cultural loss. Due to the increasing severity of climate change, it is crucial to look to the experiences of frontline Indigenous communities to support them and to work toward more resilient climate futures. Through interviews, tours, academic research, and participatory observation, I investigate how tropical storms, coastal gentrification, erosion, tourism, and oil and gas development influence climate violence and displacement in this community. Findings revealed that hurricanes were the largest factor pushing Pointe-au-Chien tribal residents toward displacement. I conclude by presenting how the Pointe-au-Chien tribe is organizing for resilience through structural and territorial decolonization. Ultimately, this study focuses on how a coastal Louisiana Indigenous community is navigating climate violence and potential displacement through cultural and community preservation.

Land Acknowledgement

The College of Wooster was founded on unceded land. This paper was written on the ancestral and contemporary territory of Wyandotte, Mingo, Shawnee, Delaware, Lenape, Myaama, Huron, Ojibwe, Potawatomi, and Odawa peoples.

The majority of this research was conducted in coastal Louisiana, the ancestral and contemporary territory of the Chitimacha, Biloxi, Choctaw, Houma, Atakapa, and Acolapissa peoples. The Pointe-au-Chien Indian tribe has ancestry tying back to all of these communities, and I honor and pay my respects to elders both past and present.

Indigenous [1]narratives and experiences are part of the collective history of these and they are central to our understanding of the Indigenous-settler dynamic that continues to shape this country's history, culture, and the land we occupy. The place we now call Wooster—including its buildings and the infrastructure that brought most of us here—were created, built, and maintained by laborers from many different backgrounds, including African Americans who fled enslavement in the South but continued to face discrimination and violence; immigrants and refugees from the Americas and all over the world who have been the target of recent ICE and policing raids, Ohio farmers, and working people from all over our area whose socio-economic position has made access to this institution largely unavailable.

I make this acknowledgement to remember the histories and continued legacies of violence, to recognize Indigenous and Black claims to life and land, and to recenter those claims as we commit to better ways of caring for each other and for this land.

Along with this acknowledgement[2], I ask: what responsibilities and commitments can we make to foster more honest and generative relations with this land and with each other? Can we, wherever we go, acknowledge Indigenous claims to the land we occupy? Can learning about the lifeways and lifeworlds of the original and rightful caretakers of the land we occupy guide our own changing relation with the places we are and the communities that belong to those places? How can we share our learning with others?

[1] Adapted from the College of Wooster's Land Acknowledgement as presented at the 2021 Fall Convocation ceremony

[2] Adapted from the *Decolonize Clemson* Land Acknowledgement Model Statement

Acknowledgements

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To my WOODS family for embracing and supporting me, with a special "big what" to my co-trip leaders and dear friends: Sarah, Ben, Elise, Emma, Alena, and Claire, and to my 2022 van

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Bulbancha [3]and Beyond: A shout out to my love affair with Louisiana. To my dear Louisiana-turned lifelong friends: Abby, Merry, Robin, Bill, Lisa, Madison & Robbie. To Robert Francis of the backstreet culture museum for bringing the warmth, richness, and sounds of New Orleans right to my doorstep. To BayouNDN food forest for hosting me and providing opportunities for me to build relationship with the land.

Figure 1: Tree and poweline in Pointe-au-Chien at dusk

[3] Bulbancha is the name of the precolonial community that was at the site of New Orleans. Derived from the Choctaw language, Bulbanca means "place of many tongues"

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CHAPTER ONE: Introduction

If you drive far enough south along the path of the great Mississippi, you will hit an ever-narrowing Louisiana bayou, where the land seeps into the water just as the water seeps into the land. Here, where Spanish moss is held by bald cypress trees, where children wave at dancing pelicans and diving egrets, is where generations upon generations of Indigenous people have lived. The descendants of those first peoples, as well as other Indigenous folks in diaspora, still live on this bayou. The vibrant marshlands that hold this community have transformed and eroded over the last few centuries, leaving the tribe on unstable ground literally and figuratively. As sea levels rise, and climate change takes a stronger hold, the ancestral homes of these frontline Indigenous communities in coastal Louisiana are becoming submerged and their traditional livelihoods are becoming untenable.

In light of this, I explored the historical, environmental, and socio-political factors that impact the ability of one coastal Louisiana Indigenous community to stay on their ancestral land amidst climate crisis. Known as the Pointe-au-Chien Indian tribe, this small, vibrant, Native community is fighting for survival as climate change and socio-political factors threaten to displace them from their ancestral land.

Coastal Louisiana is home to 40% of the wetlands in what is known as the continental United States but has suffered 80% of the wetland losses (Dardis, 2010). For a community that has lived with the wetland ecosystem for as long as collective memory, this loss is devastating socially, economically, culturally, and environmentally. This rapid wetland loss is a result of climate change exacerbating erosion, saltwater intrusion, tropical storms, and sea level rise. In

this paper, I explore how political, economic, social, and industrial forces also contribute to the drive to leave.

Coastal Louisiana Indigenous communities such as the Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Tribe located on a quickly eroding island west of Pointe-au-Chien, are actively planning for relocation. Erosion and the consistent threat of hurricanes has rendered living on the island near impossible. This is an incredibly difficult and traumatic change for the tribal members who are now forced to leave the lands their ancestors have lived with for generations.

Relocation, even in the face of significant environmental challenges, is not regarded as a viable option for many Indigenous Louisianians, especially older adults (Simms, 2017). The Pointe-au-Chien tribe looks at what is happening to the Isle de Jean Charles as a warning. Climate violence, fueled by a history of colonization, extraction, and industrialization, is creating environmental refugees out of the land's original stewards.

As I sought to investigate what conditions influence Pointe-au-Chien tribal members' ability to stay on their ancestral land, I hypothesized that tropical storms, coastal erosion, tourism, and oil and gas development all directly drive climate-forced displacement. The findings revealed that the truth was far more complex.

This research seeks to provide a more comprehensive narrative on how the history of climate change and colonization has influenced Pointe-au-Chien tribe's ability to stay on their ancestral land. In addition, another major question driving this research is: how is the Pointe-au-Chien tribe resisting climate violence including increased hurricanes and how are they organizing for resilience and survival? I was interested in investigating this because the inevitability of climate violence requires adaptation and resistance.

My methodology reflected these research objectives, and included a combination of on-site participatory observation, interviews, and tours. I spent a total of five weeks in coastal Louisiana between May 2021 and January 2022 conducting participatory observation research, including volunteering with Hurricane Ida recovery, and conducting interviews with Pointe-au-Chien tribal members. This research approach was modeled after recommendations and standards created by Indigenous tribal councils across the continent, with specific emphasis on Pointe-au-Chien's own research standards, and those created by the Heiltsuk Nation Tribal Council, located in British Colombia, Canada.

Pointe-aux-Chenes or Pointe-au-Chien: Linguistic Nuance in Indian French

Louisiana has been colonized by the French, Spanish, and English, forcing linguistic assimilation. This has resulted in the formation of several dialects, including Cajun French, also known as "Indian French" or "Louisiana French." This dialect replaced ancestral Indigenous languages such as the Chitimacha language, historically spoken in Pointe-au-Chien.

While people have been in relationship with the land studied in this project for centuries - if not millennia - there is little recorded information about the names given to this land and waters by its first peoples. What we do know, is that wild dogs once roamed this strip of land, living amongst the people, cypress trees, and other wetland fauna. In honor of these canines, the Native human inhabitants of the area, who had adopted French as their primary language after colonization, named it Pointe-au-Chien, or Dog Point. According to Pointe-au-Chien tribal members, this name was not well received amongst settlers, who did not appreciate the bayou being associated with dogs. As a result, settlers with social and political sway changed the spelling and meaning of the name to Pointe-aux-Chenes, or Oak Point. The name of the

unincorporated community, wildlife management area, and elementary school were changed in accordance with this decision. Pointe-au-Chien tribal members use both spellings when referring to the larger community, the bayou, or the land, but the correct name of the tribe is the Pointe-au-Chien Indian Tribe. Most non-tribal members refer to the area only as Pointe-aux-Chenes and use interchangeable spellings for the tribe name. In order to respect and honor the history and decisions of the tribe, I will refer to the tribe as the Pointe-au-Chien tribe or Indigenous community. When speaking about the land and area in a historical and Indigenous context, I will use the Pointe-au-Chien name, and when discussing the unincorporated broader community, the wildlife management area, and other settler-named spaces, I will use the Pointe-aux-Chenes spelling to avoid confusion.

Angles of the Bayou: Seeking to Understand coastal Louisiana through a new Lens

The history, culture, and socio-political landscape of Pointe-au-Chien Indian tribe and other small, diasporic, coastal Louisiana Indigenous tribes is not well documented in the academic tradition. This research joins the critical dialogue of climate migration studies that seeks to understand the impact of colonization, industry, and climate change on coastal Indigenous communities.

Previous research conducted on climate migration in Pointe-au-Chien has been limited and short-term, and much of the research on coastal Louisiana Indigenous communities has been broad, not acknowledging the specific cultural differences and lived experiences of individual communities and governments. Traditional Ecological Knowledge (TEK) mapping, medicinal herb research, and on the connection between cultural and coastal erosion (Dajko, 2020) have been conducted in the area, touching on the roles colonization and climate change have played in

forced migration, but those studies conducted by settlers have not gone in depth. This research will fill this critical gap by examining the ways colonization and climate change have influenced hurricanes, erosion, tourism, gentrification, and oil and gas, and in turn, how those have influenced migration.

By taking a participatory research approach rooted in a commitment to relationship building that extends beyond the timeline of this project, this research provides a framework to amplify the voices and experiences of Pointe-au-Chien tribal members facing climate violence. The Pointe-au-Chien tribe has historically been excluded from decision making as a result of discrimination on the basis of socio-economic, cultural, tribal, racial, and geographic identities.

As a result, Pointe-au-Chien tribal members are continually dismissed in conversations regarding their own needs, futures, and experiences. Environmental justice theory emphasizes the importance of centering those impacted by environmental injustice in conversations and actions regarding resilience and justice. For this project, I used this framework to guide my role as a participatory observer, and to center the experiences of the tribe in the discussion of the findings.

Paper Structure

I begin this paper by providing an overview of the history and current social, cultural, economic, and ecological context of Pointe-au-Chien. This history spans 6,000 years, with focus on the past 500 years out of relevancy, and out of the fact that Indigenous ways of knowing and remembering are not valued in colonial scholarship. This chapter is followed by a discussion of this study's methodology, which centers on participatory observation. It also discusses the complexity and history of harm academia has in Indigenous communities and speaks to how I

approached the research with this context. To write about Indigenous climate forced displacement in the United States, we must acknowledge that the lived realities of Indigenous communities and individuals are in no way monolithic. Indigeneity is a vastly diverse experience, and each Indigenous culture, nation, and community is distinct and unique.

The third chapter engages in an analysis of environmental justice, decolonial, and postcolonial theories, and constructs a theoretical framework, which is applied in the discussion chapter. Here, I draw on Walter Mignolo's discussion of decolonization to understand the effect colonialism has had on Indigenous communities, non-Western/colonial ways of knowing, and on social science procedures. The concept of environmental justice then lays the foundation for a discussion of the connections between social and environmental landscapes, and how communities historically oppressed by white-supremacist colonial institutions are more likely to be subject to environmental violence.

Climate change is incredibly complex and interwoven with legacies of settler-colonialism and consequent extractive industries. As such, I was interested in the relationship between colonization and climate change in the context of this Indigenous community facing displacement. The final chapter draws together the major findings of the project and seeks to position the Pointe-au-Chien tribe's experience with forced displacement within the larger narrative of climate and colonial violence.

CHAPTER TWO: Context and History

> Hopefully we will be able to adapt and something beautiful will be able to grow from here. But if I am here to witness the death of the land I want to make sure that the rights of letting go are honored and respected and that we pay tribute to it and enjoy it and appreciate it while it is here.
>
> Monique Verdin, Houma Nation member, Indigenous resident of coastal Louisiana
>
> (Cry You One, n.d.,)

History of the Lands and Waters

South Louisiana rests on the youngest land in what is now known as the United States. It is not solidified with bedrock nor reinforced by rocky flood channels. Instead, millennia of sea level rise, fall, and river development have resulted in an earthen floodplain of a river valley.

Glacial melt from the last ice age resulted in sea levels around the globe rising dramatically. Over a 12,000-year period, large areas of coastal land submerged, and shorelines retreated until sea levels finally stabilized around 7,000 years ago. The Mississippi river, ever flooding and regressing, discharged sediments that filled up the embayment between what is now known as Baton Rouge and Lafayette, and proceeded to reclaim the then shallow Gulf of Mexico. This sediment created the soil and land that now makes up coastal Louisiana and much of the Gulf coast. These delta lobes grew as sediment was deposited by the waters of the Mississippi, creating branching tributaries. When faced with changes in water flow, tributaries changed course to find faster paths to empty into the Gulf, eventually forming several more established tributaries that transverse coastal Louisiana today. As opposed to much of the land on Earth as well as in the continental United States, coastal Louisiana's land was not hidden under a shallow sea before being exposed. Instead, much of it simply did not exist until sediment was deposited by the Mississippi[4].

[4] See figure 2

The image below shows the development of the Mississippi River sections of land, or delta lobes, in coastal Louisiana. Each delta lobe is outlined on the map, and then identified in the key at the bottom, where the age of the lobe is shown. Pointe-au-Chien is located at the intersection of the Lafourche section (#4 in Green), and the St. Bernard section (#2 in red).

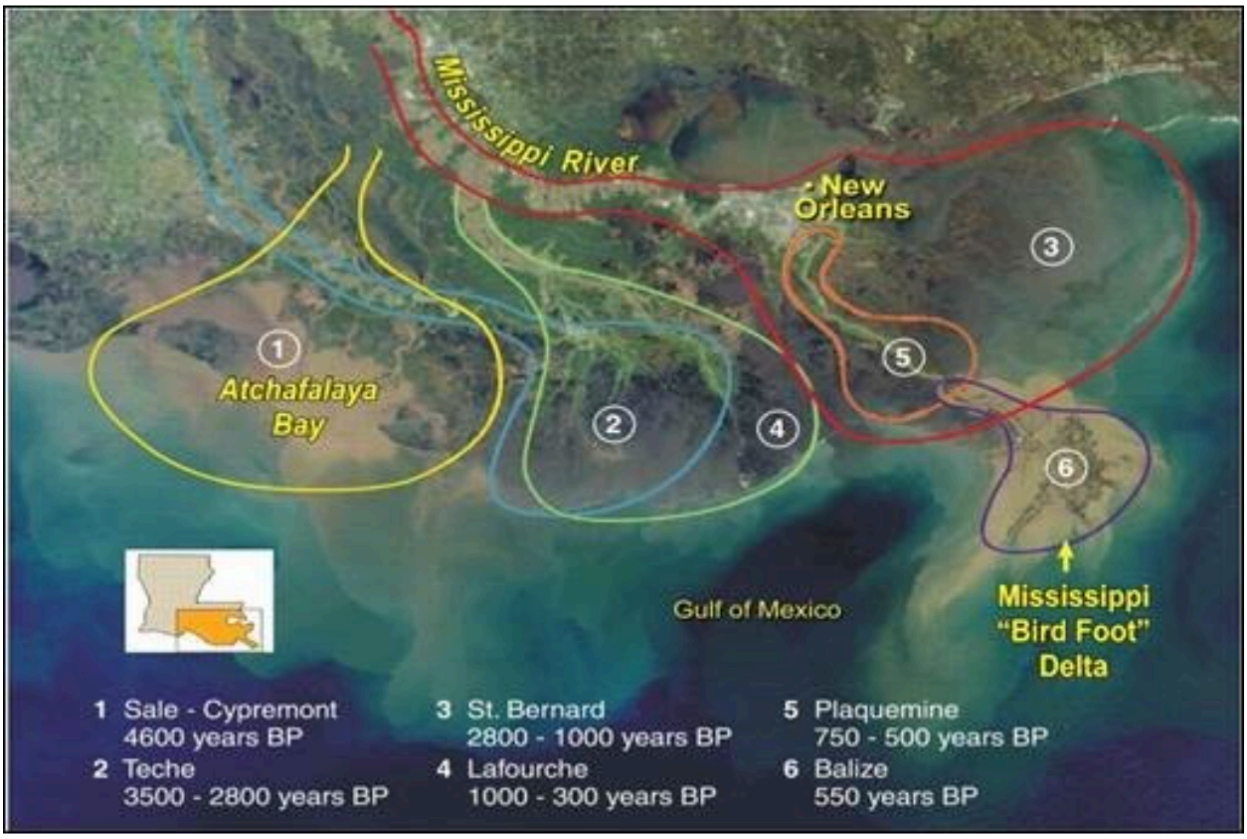

Figure 2: Historical Development of Mississippi Delta Lobes.

Source: Mississippi River Delta Organization

The location and development of these delta lobes has influenced the lives of the many peoples that have lived in this area.

History of the People: Pre-Colonization to Early Contact

The land currently known as Pointe-au-Chien has been continuously occupied by people Indigenous to South Louisiana for as long as the tribe can remember. The ancestors of Pointe-au-

Chien tribal members were members of the Chitimacha, Biloxi, Acolapissa, and Atakapa nations. Pre-colonization, the Biloxi nation occupied central Louisiana, the Acolapissa lived between coastal Louisiana and Mississippi, and the Atakapa lived along the Gulf of Mexico. According to archaeological finds, the Chitimacha (Sitimaxa) people began settling in the bayou region of coastal Louisiana as early as 6,000 years ago, after migrating from west of the Mississippi River (Brightman, 2004)). Other sources suggest that they settled in the bayou around 500 A.D. Sitimaxa means, "people of the many waters" in the now-extinct Chitimacha language, as a reference to the tributaries, wetlands, and sea that surrounded the Chitimacha confederacy territory (Granberry, 2008). With lands spanning the entirety of the Atchafalaya basin at the nation's height, the Chitimacha farmed, fished, and hunted, subsisting on potatoes, maize, and wild game (Julia, 2014). Clan membership was passed down matrilineally, and the Chitimacha were known to absorb other tribes and communities (Sultzman, n.d.).

Figure 3: Map of Indigenous Nations at the time of Colonization. The numbered list on the left refers to the numbered areas on the map. Source:

What is now known as Louisiana was invaded by French settlers in the early 1700s, and it remained a French colony until the Louisiana Purchase of 1803, other than from 1763-1802, when the Spanish governed the state. At the time of colonization, the "Chitimacha were known as the most powerful tribe between Florida and Texas", and the confederation was made up of over 20,000 people (Julia, 2014, pg 2. European contact with the Chitimacha began in the early 1700s when the French began to colonize the Mississippi river valley, bringing with them diseases such as measles, smallpox, and typhoid fever. Without immunity to these diseases, thousands and thousands of Chitimacha died, and the overall population dwindled almost to the point of extinction (Julia, 2014). Wars between the Chitimacha confederacy and the French exacerbated the death tolls brought on by the epidemics. From 1706-1718, both nations engaged

in a brutal war, and many Chitimacha were forced into slavery by the French. As a result of the biological and physical violence, the confederacy, along with other Indigenous communities, retreated farther southwest to Louisiana (Julia, 2014).

Upon invading and settling the area, European settler-colonists pushed Native folks out of areas deemed desirable for settlers. The settlers killed Native people living in the areas they wanted to conquer and settle. Those that they did not kill were pushed off their land and the settlers forced them to abandon their culture and language to assimilate. Settler-colonial violence created Indigenous diaspora in Louisiana and much of the rest of the Southeastern United States. In escaping genocide and being pushed farther west, some Native individuals, families, and communities traveled to the far corners, or bayous of coastal Louisiana, finding refuge in the swamp and with the tribes already living in the area. Over generations, these families and cultures mixed, finding themselves rooted in Indigenous ancestry, tradition, and shared Cajun French language. Location-based tribes formed, including Pointe-au-Chien and its tribal neighbors: Bayou Lafourche Band of Biloxi-Chitimacha-Choctaw, Isle de Jean Charles Tribe of Biloxi-Chitimacha-Choctaw- Indians, and the Grand Caillou/Dulac Band of Biloxi-Chitimacha-Choctaw Indians. As indicated in the names of other local bands and tribes, the coastal Louisiana Indigenous community is incredibly diverse in terms of national ancestry. However, it is important to recognize that they do share cultural, linguistic, and traditional ecological knowledge.

This shared identity has cultivated a sense of pantribal solidarity, as evident in current multi-tribal organizations such as The First Peoples' Conservation Council (FPCC) of Louisiana. When referring to all coastal Louisiana Indigenous peoples, terminology ranges from person to

person and tribe to tribe, but common terms include, “First Peoples of Louisiana, Coastal Louisiana Native/Indigenous communities, and Coastal Louisiana Indians.”

When discussing culture in Louisiana, it is important to mention that sense of identity is different in Louisiana than in most of the United States as a result of several waves of colonization and subsequent cultural mixing. The most common terms used to describe Louisiana’s peoples and culture are ‘Cajun’ and ‘Creole’. The term ‘Cajun’ refers to the descendants of Nova Scotian exiles that populated coastal Louisiana, and is now used to describe virtually everything related to southern Louisiana. The term ‘Creole’ refers to Black or mixed-race Louisianians. While these peoples and cultures have much in common, there are also distinct cultural differences.

Land Loss: Impact of Colonization on the land

The introduction of European settlers and the consequent violence against Indigenous peoples and their lands has created a lasting impact on the ecological state of coastal Louisiana. The Louisiana Purchase of 1803 resulted in the United States’ acquisition of land formerly occupied by the French from New Orleans to North Dakota. Of course, this land was occupied and cared for by First Nations for centuries before this colonial expansion. Early colonial settlement prompted the construction of levees to fend off high water, a practice not utilized by the First People of Louisiana, who adapted to the fluctuating water levels of the Mississippi. As new access to the Mississippi promised transportation and economic opportunity, the U.S. (United States) government invested in flood protection infrastructure in the early 1800s. This infrastructure most commonly came in the form of levees, which aimed to contain water within the “original” footprint of the river to avoid flooding. Contrary to their projected purpose, levees proved to worsen floods when they did occur, prompting much more widespread damage instead

of pre-levee floods that were fairly mild. The U.S. government charged the Army Corps of Engineers with the task of building and maintaining this flood protection and transportation infrastructure. Unlike the First Peoples of Louisiana, who depended on flooding for silt deposits, and respected the everchanging flow and routes of the river, the U.S. government wanted to control this flooding in order to develop extractive industry, permanent housing, and infrastructure to support the growing settler-colonial population. To facilitate this endeavor, the Army Corps of Engineers, removed trees, flattened sandbars, and built dams, to control the flow and direction of the Mississippi River.

The history of Louisiana's land evolution was separated into distinct time periods by Louisiana State University Professor, Dr. Christopher Siverd (Siverd, 2019). He speaks to how the industrialization of 1890-1930 brought the disappearance of the coastal forests and the excavation of lakes and bayous. A major incident contributing to Louisiana land change was the Great Flood of 1927. This event was the most destructive river flood in the history of the United States at the time, directly affecting folks living along the Mississippi delta in Arkansas, Mississippi, and in Louisiana. An estimated 931,159 people were displaced across the seven states affected, and the flood killed somewhere between 250 and 1,000 people (Parrish, 2017). The Army Corps of Engineers was forced to strategize after their "levees-only" policy failed miserably. Under the Flood Control Act of 1928, the Corps built the world's largest system of levees and floodways, including outlets, human-built structures that diverted water from the river through openings in the levees into the Gulf of Mexico. While this system prevented some flooding, it ultimately changed the flow of the Mississippi river, resulting in increased future flooding, and a forever changed delta landscape. The way water was channeled reduced absorption of seasonal rains, which in turn, increased the speed of the current and prevented the

deposit of new soils along the way (Reuss, 1982). The Mississippi River now acts more like a massive canal than a naturally flowing river, with most of its waters pouring into the Gulf, leaving surrounding Bays that once received sediment deposits with barely any flow. Without the steady flow of sediment, the Louisiana marshlands have been sinking for 100 years. The loss of wetlands that helped protect communities against storms now leave Louisiana communities even more vulnerable during storm and hurricane events (Cornwall, 2021).

In the eighty years between 1930 and 2010, industrialization and the tech age compounded the effects of climate change that the scientific community began to observe in the late 1930s (Plass, 1956). This radical shift in climate caused more frequent and more intense tropical storms, which in turn caused widespread environmental degradation in coastal areas. During this period of change, substantial wetland loss occurred in the Terrebonne and Barataria coastal basins, and the Atchafalaya-Wax Lake Deltas emerged and grew. Siverd estimates that between 2010 and 2100, a time period that we are currently twelve years into, all coastal basins will become flooded due to increased global mean sea level rise and continued erosion (Siverd). This has serious implications for future flood exposure for coastal communities.

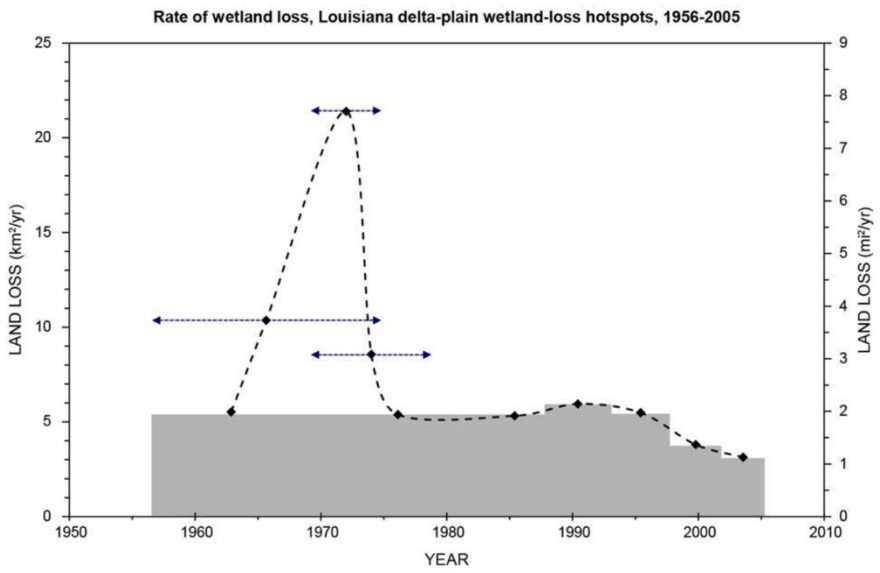

Figure 4:Combined land-loss curve for Madison Bay, Pointe au Chien, Bully Camp, DeLarge, and Bay St. Elaine wetland-loss hotspots showing average land-loss rates for 1956-2005

According to oral histories and satellite mapping, Pointe-au-Chien has lost over five miles of coastline since 1932. The strip of land that the tribe currently resides on used to extend miles into what is now open ocean and uninhabitable marshland. As a result, the tribe lost dozens of homes, structures, and infrastructure. The ability to continue ancestral and traditional practice and continue passing on traditional knowledge was also impaired (Ferguson, 2009). Elders in the community still remember what the tribal land looked like, and how vibrant the community was before erosion ate up miles of land.

Land Management

Building levees and flood control structures along the Mississippi disrupted the integral ecosystem balance maintained by the flow of the river and intertwined organisms. Before flood control structures, the river's expansion, and retreat - corresponding to land loss and gain, followed a fairly predictable pattern. But with raised levees along the banks of the river, the

necessary flooding was prevented, resulting in sediment not being deposited in coastal marshes and widespread damage from floods (Dardis, 2010).

Coastal Louisiana land management has developed as the economic, cultural, social, and ecological landscapes of the bayous have changed. Wetland reclamation was implemented on behalf of the U.S. government starting in the early twentieth century in order to dry up the marshes and wetlands that colonial settlers deemed "wastelands." These areas, considered full of life by Indigenous inhabitants, were converted into farmland as a form of public and private environmental management from the late nineteenth century well into the twentieth. The early twentieth century also brought conservation theory and practice from the perspective of Euro-Americans, prompting the US government to take protective action toward natural resources and certain wildlife species considered important enough to save. More recently, the conservation mindset and practice has evolved into restoration. This regime seeks to re-establish the wetlands that were converted into farmland or industry, in order to support ecological wellbeing, and more importantly to the state, economic well-being (Colten, 2017). This tradition helps ecosystems, but is also a drop in the bucket when compared to the incredible damage done by industrialization and climate change.

Wetland Degradation

The coastal wetlands of Louisiana contain significant diversity of estuarine habitats and are characterized by marshes, man-made canals, and forested swamps. Over half of Louisiana's original wetlands have been lost over the past two hundred years due to natural evolutionary practices and human activity such as dredging wetlands for canals and filling for agriculture and development. Louisiana is home to around 40% of the wetlands within the continental United States but has suffered about 80% of wetland losses (Dardis, 2010).

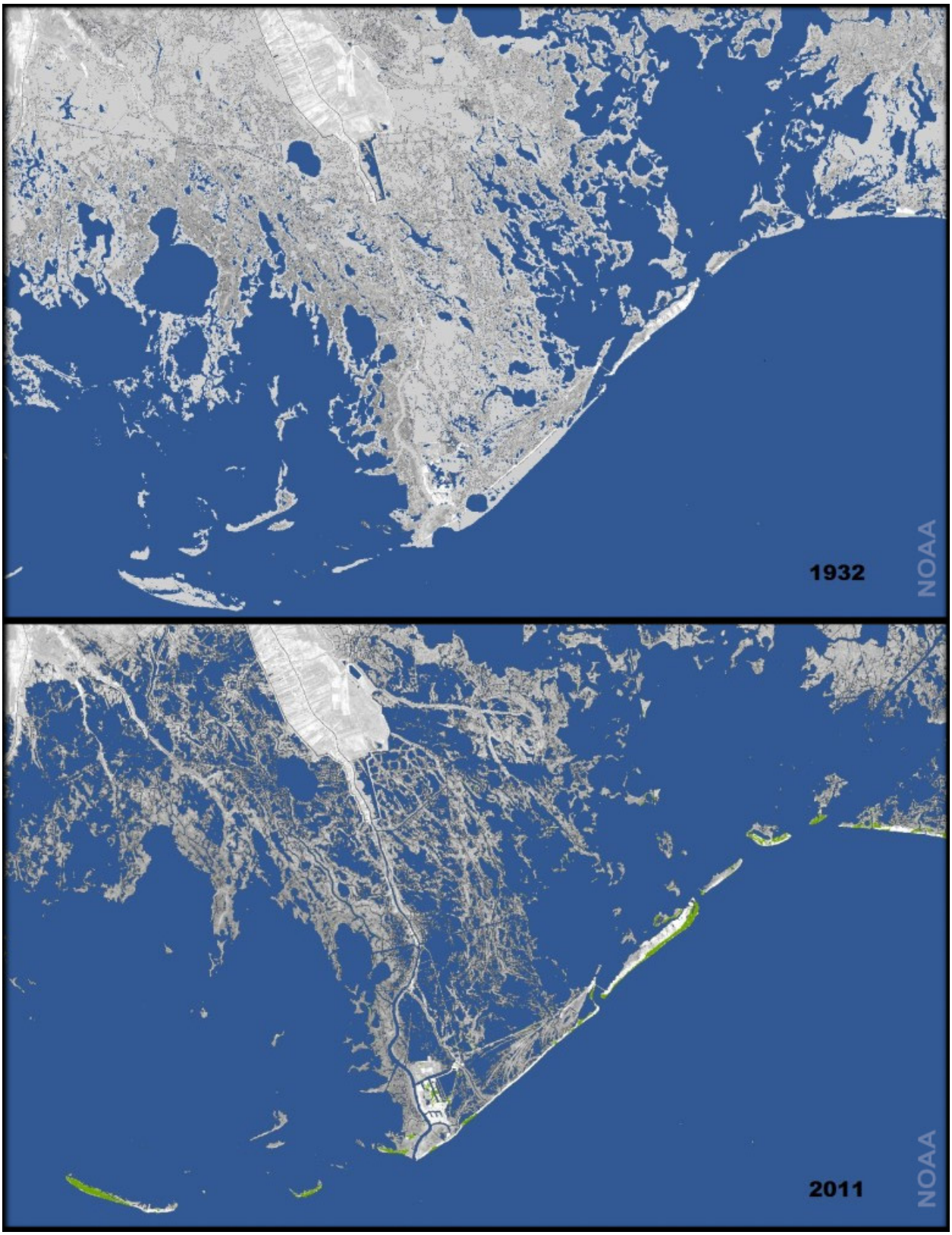

Figure 5: Historical Coastal Louisiana Land Loss from 1932 to 2011. Source: Satellite data and map layers courtesy of the US Geological Survey. Map by NOAA Climate.gov team. Science reviewer: Stephen Gill.

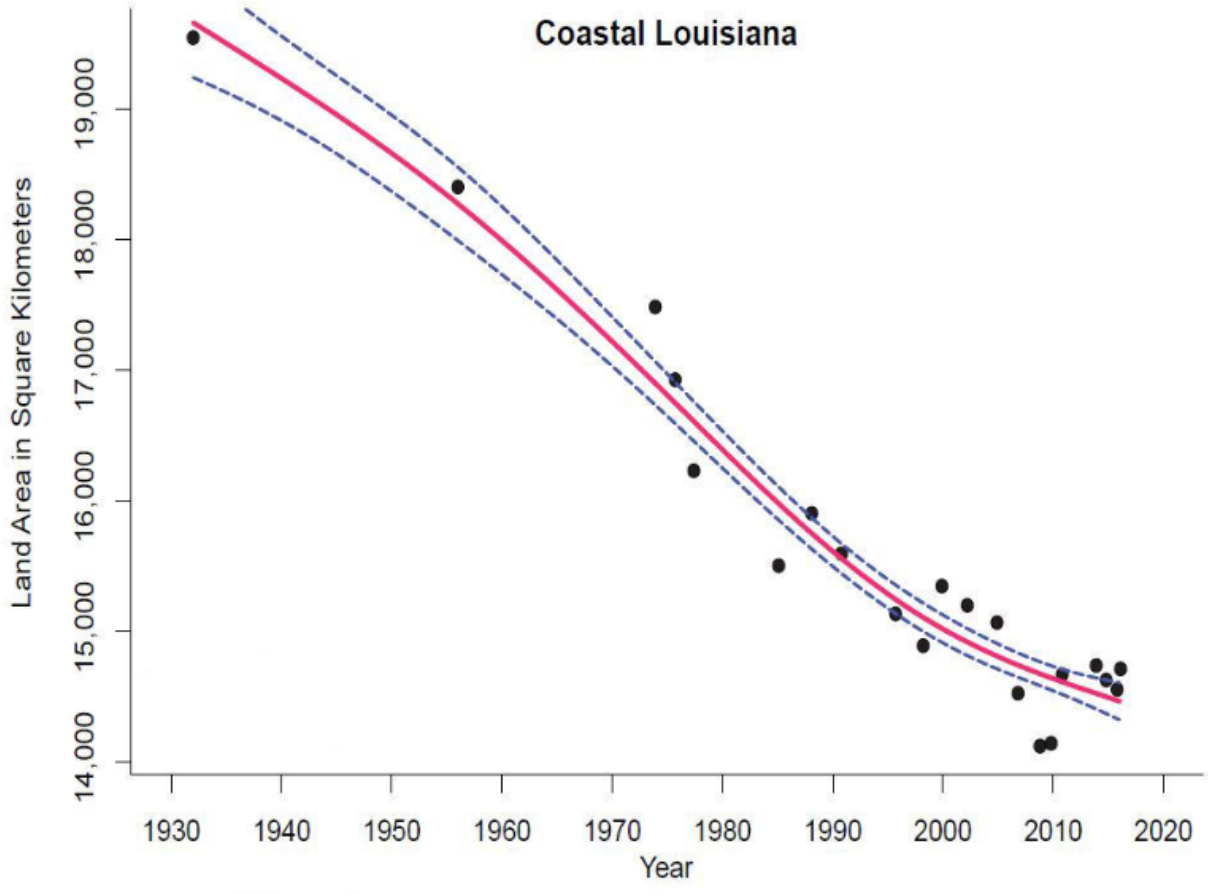

Figure 6 : Coastal Erosion and Wetland Change in Louisiana. Source: United States Geological Survey (USGS)

The Mississippi Delta plane has experienced erosion and degradation as a result of the compaction of loose sediment, rise in relative sea level, and catastrophic storms. Typically, river deltas slowly expand due to increasing amounts of sediment deposited by the river. Subsidence, the process of land sinking or the lowering of land surface elevation is a phenomenon that can

both be a natural process and a result of anthropogenic causes. As the soft river sediments settle and compact, the land becomes smaller and closer to sea level, if not below. The Mississippi Delta plane has experienced erosion and degradation because of the compaction of loose sediment, rise in relative sea level, and catastrophic storms.

The continuation of erosion and degradation has led to the formation of segmented low-relief barrier islands (Shirley, n.d.). Louisiana's barrier island shoreline (islands that help protect the coastline by acting as a barrier to intense weather events) is eroding as rapidly as 20 meters per year as a result of hurricanes and natural ecological processes. The land's retreat is due to Mississippi sediment compaction: the process of deeply buried sediments being placed under pressure due to the weight of overlying layers, pushing the grains together. This process leads to sea level rising ten times faster than the world's rate. Scientists predict that these barrier islands will be gone within the next few decades, leaving coastal Louisiana's delicate ecosystem even more susceptible to storm damage and sea-level rise (Sallenger, n.d.).

Those living in coastal Louisiana rely on this protective barrier for social and economic activities as well as to protect against damage from storms (Laska, 2005). Studies have indicated that major shifts in the course of the Mississippi River have been large contributors to wetland degradation (Shirley, n.d.). Wetland degradation is caused and exacerbated by human activity, and is evident in the erosion, barrier islands, and wetland loss in Pointe-au-Chien. This phenomenon is integrally connected to other forms of climate change and human-caused environmental damage.

Sea Level Rise

Not only are Louisiana residents, (human and non-human) subject to the violence of oil and gas exploration, and expansion, but also the devastating effects of the fossil fuel emissions made possible by that exploration and expansion. Fossil fuel emissions are the dominant cause of global warming, and in 2018, fossil fuels and industry accounted for 89% of CO2 emissions (Global CCS Institute, 2019). The correlation between global climate change and sea-level rise has been well documented, with increasing temperatures as the main global culprit of sea-level rise. Global sea levels have already increased 8-9 inches since the 1880s, and even with a low-greenhouse gas future, sea levels are projected to increase at least 12 inches by 2100. Worst-case scenarios estimate that without mitigating fossil fuel emissions, sea level could rise upwards of 8 feet by 2100. The inevitability of some amount of sea-level rise poses a monumental threat to coastal communities around the world, including in Gulf-adjacent Louisiana. Across the United States coastlines, high-tide flooding is now (as of October 2021), 300% to more than 900% more frequent than it was 50 years ago (Lindsay, 2019), and Pointe-au-Chien and other coastal Louisiana communities have experienced it firsthand. Sea-level rise has and will continue to lead to flooding, displacement of the population, and destruction of coastal ecosystems, which would eliminate wetlands and their biodiversity (EPA, 2017).

As erosion and sea-level rise eats up the delicate coastal land of Louisiana, Native communities are confronted with decisions surrounding migration and coastal restoration. While climate projections estimate that most of what is now considered coastal Louisiana will become submerged over the next century, many Native residents choose to stay on the land that has supported them for centuries (Colten et al., 2017). The Pointe-au-Chien Indian tribe and other Native nations and communities in the area are advocating for coastal management that will protect their communities and land in the face of increasingly powerful hurricanes, erosion, and

sea-level rise. Coastal management has historically been prioritized by the state government in urban areas, and so these rural communities are fighting for the recognition that their land and communities are just as important. Coastal residents have reported that they felt that bayou culture was one of adaptability and resilience and that they expect to continue to adapt and persevere in the face of environmental disaster. Residents' sense of identity is often integrally connected to the land, reinforcing the idea that relocation, especially relocation without input from residents, is harmful (Simms, 2017).

Figure 7: Pointe-aux-Chenes Marina Pier Erosion

Figure 8: Erosion on a bayou bank reinforced with wood

Oil and Gas Exploration

Figure 9:Warning of a Natural Gas Pipeline on the bayou bank

Petroleum resources are found throughout the state of Louisiana, with the largest reserves in the northern and southwestern parts of the state. With the inclusion of offshore drilling in federal waters, Louisiana is one of the five top states in the production of both crude petroleum and natural gas (ICF, 2020). Pointe-au-Chien's economy, environment, culture, and community

have been shaped by this industry. Coastal Louisiana specifically, supports nearly one-third of the crude oil and one-fifth of the natural gas produced in the United States (Laska et al. 2005). The onshore infrastructure that supports exploration and extraction activities in the Gulf of Mexico predominantly resides in the bayous, swamps, and deltas that hold Coastal Louisiana. The oil and gas industry extraction supports industries that follow the life cycle of products created from oil and gas such as petrochemical plants, refineries, on-shore and off-shore wells, and pipelines (Hemmerling, 2020).

Figure 10: Oil and Gas Infrastructure on the Lafourche parish side of Pointe-au-Chien

Canals dug for oil and gas exploration and harvesting have increased the rate of saltwater intrusion and erosion on lands that Native peoples inhabit. These canals started off relatively small and uncommon, but due to the soft soil and the consistent expansion and dredging of

canals, they are now a more significant contributor to wetland loss. By opening up pathways to the sea, saltwater mixes with the fresh, creating an unfortunate combination for the fish, birds, and other wildlife so used to the natural separation.

One of the most destructive practices in coastal Louisiana is the removal of land through the construction of navigation canals as well as waterfront properties and marinas. Known as coastal excavation, this process includes canal dredging for the purpose of oil and gas exploration. Extensive dredging for oil and gas exploration peaked in the 1960s to 1980s, resulting in over 10,000 miles of canals being built (Pendarvis, 2010). When land is removed for canals, the navigation channels allow saltwater to intrude into inland freshwater marshes, creating unlivable habitats for freshwater organisms and vegetation. The loss of this freshwater vegetation leaves the soil more vulnerable to erosion, leaving the soft soil to disintegrate into the brackish water, never to be reunited with the shore again.

Petrochemical buildout, the expansion of oil refinery infrastructure throughout a specific region, has shaped Louisiana's ecological and health landscape. Colloquially known as cancer alley, the petrochemical corridor along the Mississippi River between Baton Rouge and New Orleans contains dozens of polluting facilities, resulting in some of the United States' highest toxic levels of carcinogens in the air (Swenson, 2019). This area was given its name after residents began noticing clusters of cancer cases within their area, and in line with most sacrifice zones, Cancer Alley residents are predominately Black, Indigenous, and/or People of Color. Health risks, such as cancer, and heart disease, and environmental consequences that impact livelihoods, exacerbate the stress of living in a region suffering from numerous types of environmental degradation, prompting residents to leave or hunker down harder and stay.

Figure 11: Woven into the marshlands, bayou, and open waters of Pointe-au-Chien are clues to the role the petrochemical industry plays.This is a pipeline photographed by the author (2022).

Taking advantage of the fact that Pointe-au-Chien tribal members did not speak or read in English, hydrocarbon exploration companies in the early 20th century, including one named Apache oil, swindled tribal members out of their land on the Lafourche side of the bayou. Pointe-au-Chien members were told to sign lease agreements that would allow oil companies to rent out

tribal land for exploration. Native landowners signed their names as an X on these documents, believing that they were signing lease agreements when they were unknowingly signing away their property rights to the land they owned. Those oil companies still own property in Pointe-au-Chien (personal interview with Christine Verdin, 2021).

Pointe-au-Chien has attempted to sue these companies for deceiving Native families out of their land, but allegedly, attorneys in Houma[5] will not take on cases against oil companies. The hold that the oil and gas industry have on the state of Louisiana discourages residents from taking legal action against them.

On the back of Hurricane Katrina, the BP Deepwater Horizon Oil Spill of 2010 in the Gulf of Mexico resulted in devastating water and land contamination, becoming one of the most well-known ecological disasters in US history. More than three million barrels of oil were released into the ocean in the three months following an explosion and fire that destroyed the Deepwater Horizon oil rig in April of 2010. As oil seeped into the deep ocean, oil slicks extended nearly 43,000 square miles, and oil washed up onto more than 1,300 miles of shoreline ranging from Florida to Texas (US Department of Justice, 2015). As shrimping, fishing, and other water and land-dependent livelihoods are common for Coastal Louisianans and especially for Indigenous Louisianians, this disaster continues to have long-lasting effects on impacted communities. Fisheries were damaged and temporarily closed after the spill, and even after reopening experienced difficulties (US Department of Justice, 2015). The initial spill and consequent clean-up efforts led to genetic mutation of aquatic species, contamination of water resources, and a huge economic strain on coastal communities.

[5] Houma is the closest city to Pointe-au-Chien and is located 20 miles north of the Bayou. Houma is about an hours drive from New Orleans.

Chemical dispersants were sprayed in unprecedented amounts on and below the ocean's surface during the BP oil spill, breaking down the oil into smaller droplets that more readily mix with water. While these dispersants make it appear as if there is less oil within a body of water, they do not reduce the amount of oil entering an environment, they only push it deeper underwater. Dispersed oil has been found to be toxic to fish at all stages in their lifecycle, especially harmful to coral reefs, and pose significant human health effects (Jones, n.d.).

Ecological damage as a result of oil extraction such as the BP oil spill of 2010 and the daily contamination of air, waters, and lands compound environmental issues. In an area with few employment opportunities, coastal Louisiana residents often work in positions that subject them to further exposure to these contaminants. In the case of the BP oil spill, the shrimpers, crabbers, and fishers of the Pointe-au-Chien Indian Tribe and nearby communities often had no choice but to continue working amidst the oil and chemical dispersants.

Five Gulf states received a settlement to resolve civil claims against BP, following the Macondo well blowout and consequent massive oil spill in 2015, nearly five years after the spill began, in April of 2010. BP agreed to pay 4.9 billion dollars to Florida, Texas, Mississippi, Alabama, and Louisiana to settle claims for economic damage they have suffered as a result of the spill (The United States Department of Justice (2015).

The petrochemical industry is integrally connected to the economic and environmental identity of Louisiana. Oil and gas infrastructure is so prevalent and widespread throughout Louisiana, that damage from hurricanes and other storms is inevitable. Hurricane Ida, the most recent and one of the most devastating hurricanes in state history, triggered the most oil spills detected from space after a weather event since the US government began tracking via satellites (Magliozzi, 2021). Hurricanes can move underwater pipelines extensive distances, posing great

threat to the hundreds of miles of pipeline lining the ocean floor of the Gulf of Mexico. Over 6,000 oil and gas structures have been installed in the U.S. side of the Gulf since 1942, and 3,500 of those structures still stand (3,200 active, 200 inactive). Pipelines are more susceptible to damage from corrosion, mudslides, and seafloor erosion as they age, and with these effects exacerbated by hurricanes (2021, GAO (GOVERNMENT ACCOUNTABILITY OFFICE), it is no wonder that Hurricane-caused damage to oil and gas infrastructure is a leading cause of oil spills.

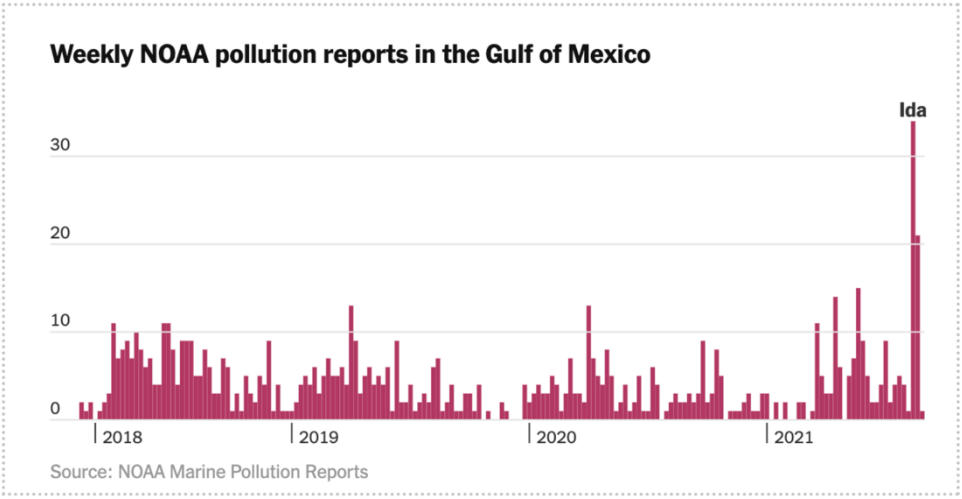

Figure 12: Weekly Pollution Reports in the Gulf of Mexico

Tropical Storms

Coastal Louisiana has been subject to extreme weather for 7,000 years, as long as the Mississippi has carved out the deltas and bayous that make up the coast. The generations of peoples who have settled here have experienced and adapted to this weather, first the Indigenous inhabitants starting over 5,000 years ago, and more recently, the multi-ethnic immigrants, enslaved people, and refugees that have settled this land over the past 300 years. Relationships to these extreme weather events have changed as the socio-economic, cultural, and climate

landscapes have shifted throughout this history. No longer are major flood events uncommon or are environmental management decisions made by the Indigenous communities stewarding the land. Climate change is exacerbating tropical storms and subsequent flooding, making hurricanes more violent and difficult to predict. Weather specialists have declared that climate change is stalling the advance of tropical storms, therefore generating more extreme precipitation effects (Weil, 2017)

Hurricanes and related storm surges cause harm to coastal wetland systems by removing land, pushing saltwater into freshwater marshes, and causing habitat and vegetation damage. These dramatically alter the habitats and ecosystems that many organisms rely on. The soft sediment deposited by the Mississippi and the thick mats of dead grass in the swamps can be easily broken up by the pounding rain and winds (Palaseanu-Lovejoy, 2013) of a tropical storm. This matters because habitat and vegetation damage results in reduced biodiversity and protection from the elements. Human-made infrastructure is also vulnerable to the destructive power of hurricanes, as are humans themselves when faced with flooding and severe winds.

When Hurricane Betsy hit coastal Louisiana, including New Orleans, in 1965, the US government approved funding for the Army Corps to build a massive hurricane protection system to support southeastern Louisiana. This funding was approved despite the high cost of the Vietnam war. Concerns for this program among residents outside of New Orleans grew as word spread that the system may divert storm surges to more rural areas where they would jeopardize the commercial shrimping and fishing industry. These disputes led to a disrupted construction schedule in the following decades, and in the early 2000s, government funding for the levees was diverted to the war in Iraq (Belkhir, 2007). So, when Hurricane Katrina struck in 2005, the system was still incomplete, leaving residents even more vulnerable to the storm's effects. As a

result, there is widespread mistrust of the Army Corps of Engineers among Louisiana residents, especially those who have experienced Hurricanes Katrina, Rita, and more recently, Ida (Cutraro, 2008).

Hurricanes Katrina and Rita

One of the most notorious and devastating natural disasters in the history of the United States, Hurricane Katrina swept through the Gulf Coast in late August of 2005. The storm ravaged the southern Louisiana coast, killing over 1,300 people across three states, and leaving hundreds of thousands displaced (Daniels, 2006). New Orleans, a predominantly Black city and the most populous urban area devastated by the storm, was home to the majority of the 1,800 people killed in the hurricane (Britannica, 2021). A history of slavery and residential segregation led to the majority of Black New Orleanians living in lower-lying neighborhoods within the city, which directly led to higher levels of housing damage and delayed or failed return to the city after the Hurricane (Fussell, 2010). Katrina exposed the vast inequity and violence left by the legacy of slavery, genocide, and consequent discrimination against Black and Brown communities in the deep south. The hurricane did major damage to the coastal Louisiana wetlands that future storms helped to reinforce, such as widespread erosion and contributions to freshwater marsh vulnerability. While the storm unit itself caused incredible damage, much of it would have been mitigated if not for the levee breaking.

Less than a month later, Hurricane Rita hit the Gulf Coast, this time affecting less densely populated areas including Pointe-Au-Chien and neighboring coastal communities, exacerbating effects felt by Hurricane Katrina. In the years since Katrina and Rita, coastal Louisiana has made a slow recovery, hindered by other environmental disasters.

Rebuilding depends heavily on support or lack thereof from FEMA (Federal Emergency Management Agency). Historically, communities like PACIT[6], ones with fewer resources and more people of color, have been largely disregarded by the agency, leaving residents with few options outside of relocating with limited resources. In order to provide incentives for residents to leave natural disaster-prone areas, FEMA will offer to buy homes in designated areas so that said residents can leave with extra cash for relocation. Such buyouts have never been offered in Pointe-au-Chien, although FEMA has provided assistance for residents wanting to elevate their homes, a program that many homeowners throughout the area took advantage of.

Hurricane Ida

On August 29th, 2021, six months into this research project, Hurricane Ida made landfall near Port Fourchon, Louisiana. At landfall, it was considered an incredibly dangerous category four hurricane, with sustaining winds measured at 150 miles per hour, which ties Hurricane Ida with Hurricane Laura (2010), and the last Hurricane of 1856 as the strongest Hurricanes to ever hit Louisiana. Ironically, Hurricane Katrina had made landfall in Louisiana 16 years to the day earlier. While most tropical cyclones weaken upon landfall, Hurricane Ida remained powerful at a category four intensity for six hours after the initial landfall. This resulted in significant damage from high winds and flooding in Pointe-au-Chien, coastal Louisiana, and beyond. Hundreds of miles away, municipalities spanning from New York City to Philadelphia issued flash flood emergencies. For New York City, this was its first-ever flash flood emergency.

[6] 'PACIT' is the acronym for the Pointe-au-Chien Indian Tribe

Twenty-one tornados were reported to be spawned from the Hurricane across the country, and the deadly storm travelled more than 1,500 miles in total (Chinchar, 2021).

The second landfall of Hurricane Ida directly hit Pointe-au-Chien's Tribal Territory, causing catastrophic damage to homes, businesses, boats, infrastructure, and habitats. The tropical storm's velocity and intensity overwhelmed the residents, emergency services, local and state governments, and the land itself. Most PACIT members evacuated in accordance with the mandatory evacuation order issued by Terrebonne and Lafourche parishes, and returned to find homes caved in, furniture blown into the road and bayou, downed powerlines, and hundreds of PACIT residents without a permanent home. Only a small percentage of homes were habitable in the weeks following the storm, and those that were livable did not have access to electricity or running water for weeks. The emergency 911 system was not available in Pointe-au-Chien for several days following the storm, so medical and other emergencies could not be addressed by government services. Electric power and running water were restored in late September 2021, nearly four weeks after the storm hit (Mamone, 2021). The internet (Wi-Fi) was not restored until three months after the storm, in November of 2021, impairing residents' ability to check email, do schoolwork, use the internet, or stay in communication with loved ones, employers, and government assistance programs (Matherne, 2021).

Figure 13: Homes destroyed by Hurricane Ida

Hurricane Ida created a long-lasting housing crisis for the Pointe-au-Chien tribe, with elders estimating that only five of forty homes on the Lafourche side of the bayou were habitable directly after the storm in August 2021, and in January 2022, most homes in the bayou were still uninhabitable. Displaced tribal members stayed with family members, in FEMA subsidized hotels and motels, and in trailers or even tents on their property. This housing crisis resulted in more disruption in local businesses, because for those that were able to stay open or reopen, it was difficult to find employees since so many people were displaced. Many businesses closed due to damage. The main shrimp processor in Pointe-au-Chien was shut down after the storm, resulting in job loss for the many PACIT residents that work in the shrimping industry (Mamone, 2021).

While the interim Morganza system [7]implemented by the parish in 2007 held up against Ida and prevented flooding, officials have determined that there are no guarantees this interim system will continue to hold. To combat the looming danger of future "100-year storms", part of the supplemental spending bill passed by the U.S. Congress in September 2021 to avoid a government shutdown, was allocated to fixing the Morganza system. 500 million dollars is expected to be given to the Army Corps of Engineers to perform construction on the system, including raising most of the system's 12-foot levees to 20-feet and building two massive floodgates in the Gulf Intracoastal Waterway. The supplemental spending bill also provided one billion dollars in federal aid to help with recovery efforts from Hurricane Ida (Magill, 2021).

Over 150 tribal families were reported to be struggling financially after the storm, and many more were in need of labor and materials assistance. The tribe created a GoFundMe on September 3rd, 2021, to provide direct aid to tribal families and individuals, with a goal of raising $1,380,000 in total. As of February 5th, 2022, $164,424 was raised through the platform (Matherne, 2021). Dozens of faith, college and university, special interest, youth, and relief groups volunteered their time and organized fundraisers to support the tribe in the months after tropical storm Ida. In the first three months, volunteers cleared debris, helped residents recover and store important items lost in the storm, cleaned up mold caused by water damage, and transported bottled water and generators down to the tribe. Once power and water were restored and dangerous debris was removed from roads and other heavily trafficked areas, volunteers were tasked with helping to rebuild homes, cooking, and delivering meals and other necessities to residents, and connecting residents to FEMA and other resources.

[7] The Morganza Spillway is a flood-control structure in Louisiana and stands between the Mississippi River and the Morganza Floodway. It aims to divert water during major flood events from the Mississippi river by flooding the Atchafalaya basin (Magill, 2021)

Figure 14: Donated supplies stored under tarps next to the PACIT tribal building

Donations of bottled water, food, toiletries, furniture, school supplies, building materials, clothing, and generators were and continue to be (as of March 2022), a huge part of the Pointe-au-Chien Hurricane Ida relief effort. Donations were dropped off directly to the tribal building or collected at drop-off sites closer to Houma and stored in and below the elevated tribal building before being distributed to tribal members. The tribal building was converted into a free store where tribal members could take the food, supplies, and other resources back to their homes or temporary shelters. Lawyers, contractors, architects, and construction crews have donated their time and labor to helping out the tribe following the storm (personal interviews, 2022) (Matherne, 2021).

Figure 15: Donated items for the "Free Store" inside of the PACIT tribal building

As of February 2022, the Pointe-au-Chien Indian tribe is still reeling from the destruction caused by tropical storm Ida. The findings and discussion section of this paper will delve deeper into the effects hurricane Ida have and continues to have on Pointe-au-Chien residents' decisions regarding climate migration.

Contemporary Social and Cultural Context during Land Loss

Treaties, Sovereignty, and Governance

1803-1840 is considered the era of Indian removal in Louisiana. While Louisiana Purchase negotiations included agreements to uphold preexisting treaties between the Spanish

and Native nations, those treaties often included agreements of European control of Native land, which resulted in further land and culture loss.

The Chitimacha Tribe of Louisiana is the only tribe or band of Indigenous Louisianians to have a reservation on part of the ancestral land. Throughout the late nineteenth and early twentieth centuries, the tribe fought for land titles from the United States government, but only a few hundred acres in the form of a trust were provided to the tribe in 1916 (ALA, 2018). According to interviews with Pointe-au-Chien elders conducted in the early twentieth century, Pointe-au-Chien Indian tribe received guests from the Chitimacha tribe who taught the Chitimacha language to tribal members. Kinship relations have traditionally governed the Pointe-au-Chien Indian community, and Pointe-au-Chien tribal members continue to live on land governed by familiar kinship systems or colloquially, "family land" (Ferguson, 2009).

Social, Cultural, and Political Ramifications of the Flood of 1927

Two years before the Stock Market crash of 1929 and subsequent decade of severe economic depression within the United States and around the world, the Flood of 1927 devastated Louisiana and surrounding coastal states. Almost one hundred years later, the political and infrastructural precedent set by this disaster influences current responses to environmental disasters. These parallels are especially evident in the way these disasters have motivated displacement.

More than 10,000 residents of New Orleans were left refugees after the flood. Those who did not have relatives they could stay with were brought to a warehouse in New Orleans where they were promised full compensation for their losses. Most of them did not receive any compensation at all. In the warehouse, white and Black families were segregated by floor. Anger surrounding the aftermath of the flood was not only for lack of relief compensation, but also for

the fact that most New Orleans residents understood that this catastrophe could have been largely avoided if it not for the engineering and infrastructural failures of the city and state (Bradshaw, 2021).

Just as in New Orleans, over 10,000 people in southern Louisiana were left homeless after the flood. The Red Cross and other local relief organizations set up makeshift tent-cities and shelters in cities and small towns. While there is no written documentation available on how the flood affected the Pointe-au-Chien tribe, it is likely that many residents were also displaced based on the tribe's proximity to flood inundated areas. The flood also displaced many tenant farmers, including a large population of Black tenant farmers, who relocated to northern cities such as Chicago and Detroit during the Great Migration (Bradshaw, 2021).

Contemporary Social and Economic Dynamics: Coastal Gentrification and Eco-Tourism

Tourism and coastal gentrification have been an increasing presence in Point-aux-Chenes since the mid 20th century. Travel centered on fishing and hunting in the bayous and protected wildlife areas surrounding Pointe-au-Chien tribe (an in Pointe-aux-Chenes municipality), has brought an influx of seasonal visitors to the area. This has resulted in tourism companies buying property to turn into weekend vacation homes. Often, the property is being bought directly from tribal members who are moving out of the Pointe-au-Chien area. A co-occurring and similar phenomenon is the practice of coastal gentrification, where out-of-state or out-of-county residents buy property in a low-income coastal area and proceed to renovate or rebuild the property so that the home value goes up. This not only prevents long-time residents of the area from buying back that property, but also encourages more non-locals to buy property in the area.

These gentrification efforts have been successful in part because parishes in Louisiana are incentivized to encourage the development of tourism "camps," rather than low-lying homes, which are valued at much less and have homestead tax exemptions (Jessee, 2019). In Pointe-au-Chien, these camps are vacation homes owned by companies or individuals and typically rented out to tourists looking to fish and boat in the Pointe-au-Chien and adjoining bayous. Equipped with docks, modern amenities, and even RV hookups, these structures are so coveted by tourists that the companies or individuals that own them attempt to buy already occupied homes to displace the current residents to make room for more tourists. Tribal members and other PAC residents tired of declining these offers have resorted to putting up "Not for Sale" signs on the front of their homes.

Figure 16: "Not for Sale" sign hung on the stilts of a tribally occupied home

Figure 17: "Rent Me" sign hung on the porch of a tourist camp. Source: Oak Pointe (2020)

The picture above depicts a “Rent-Me” sign hanging over the elevated porch of a vacation camp owned by Oak Pointe RV Pointe Aux Chenes, a company that operates next to the Pointe-aux-Chene Marina. This is an example of the kind of camps that line Lower Highway 665. Tourists staying at Pointe-aux-Chenes camps frequent the Pointe-aux-Chenes Wildlife Management Area, a 33,000-acre state protected area managed by the Louisiana Department of Wildlife and Fisheries, where game hunting is common (Granier, n.d). While this area was historically protected and managed by the Pointe-au-Chien tribe and neighboring nations, it is now only accessible to Native folks who have the mandated registrations to hunt, fish, or boat.

In order to combat the erosion, saltwater intrusion, and hurricane damage that has affected the Wildlife Management Area, several climate adaptation and mitigation techniques initiatives have been adopted. One of these is the inclusion of the area in the Morganza’s protection zone. Most of the tribe’s land has been excluded from the Morganza to the Gulf levee system (PACIT, 2022), which tribal members see as a purposeful exclusion further proving that

the tourism industry is more important to the state than the Indigenous communities that have made the tourism industry possible.

A partnership between the Restore the Earth foundation and a National Fish and Wildlife grant allowed thirty-five Shell Oil Corporation employees to plant 1100 bald cypress tree saplings (Shell PLC, 2018) in the Pointe-aux-Chenes Wildlife Management Area as a part of a goal of restoring one million acres of degraded lands and critical wetlands in the lower Mississippi River Delta (NFWF, 2020).

Responding to Land Loss

One of the most significant recent initiatives addressing climate-forced relocation relating to Pointe-Au-Chien is a United Nations complaint submitted in partnership with the Unitarian Universalist Service Committee, four Louisiana Indigenous tribes, and one Alaskan tribe. On January 15th, 2020, these groups came together to submit a complaint to the United Nations Special Rapporteurs on two UN focus issues: the Human Rights of Internally Displaced Peoples and The Rights of Indigenous Peoples. As the Pointe-au-Chien Indian tribe is a group of Indigenous Peoples dealing with climate-forced relocation within the country of the United States, it is listed as a victim in the complaint, along with the Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians of Louisiana, Grand Bayou Village, Grand Caillou/Dulac Band of Biloxi-Chitimacha-Choctaw, and the Native Village of Kivalina in what is known as Alaska. All five of these tribes are on the frontline of the climate crisis as the land they live on has been some of the first in the country to be so devastated by climate change that it is disappearing. In the case of Kivalina, their land loss is attributed to severe permafrost melt, sea-level rise, and erosion (UUSC, 2021).

As sea-level rise threatens to wash away more of the coastline, Pointe-au-Chien has combined the cultural significance of ocean life with a need for mitigation efforts in one of their most effective initiatives, seawalls of oyster shells. These seawalls are a cost-effective alternative to traditional seawalls and water pumps that push against rising waters (typically implemented in urban settings)., Oyster shells act as artificial reefs, which foster the growth and life cycles of oysters as well as for other sea life. The shells attract oyster larvae which attach to and grow within the shells, cultivating vibrant communities of oysters. An added benefit of attracting oysters is that the ancient mollusks filter up to 50 gallons of water a day, reducing ocean pollutants (Russell, 2019).

These artificial reefs have been placed around sacred sites and mounds, specifically, one of five sacred tribal mounds that date back as old as 900 A.D. Louisiana holds a significant amount of Indigenous mound sites in the Mississippi valley, second only in number to the state of Mississippi (Saunders, 2020).

Archaeological surveys have revealed at least three ancient tribal earth mounds in Lafourche parish, where the tribe is located. These are estimated to have been built from 400-1400 A.D and are regarded by Anthropologists, Archeologists, and the descendants of those who built them to be incredibly culturally and historically significant. A similar mound in Northern Louisiana has been designated as a UNESCO World Heritage Site alongside the Great Pyramids of Giza and the Taj Mahal. Sea level rise, coastal erosion, and consequent land loss threaten the mounds, and current land loss projections estimate that the mounds could be completely submerged in the coming decades (Keepers of the Mound, 2017).

Several mounds are located within Pointe-au-Chien, with the tribe serving as their caretakers. Due to land loss, the mounds are now only accessible by boat, and in order to

preserve these sacred sites, their location is not disclosed to the public. Environmental threats are not the only source of worry for these mounds, looting and destruction of sacred Native mounds has been common (Talamo, 2016).

In a collective effort of solidarity, sustainability, and resourcefulness, New Orleans restaurants partnered with Pointe-au-Chien and neighboring communities to collect and donate discarded oyster shells used in restaurants so that they could be incorporated into protective reefs. Called the oyster shoreline stabilization project, this was a community and tribe-based effort in 2019. Over one hundred volunteers collected, sorted, and transported shells from New Orleans to Pointe-au-Chien, where they were assembled into 30-pound nylon bags and then stacked six feet high - up until a little below the water's surface. Once submerged in the water, oyster larvae attach themselves to the already existing shells. This technology has proved successful both on a small community scale as well as industrially.

Figure 18: Volunteers add recycled oyster shells to an artificial reef in Pointe-aux-Chenes (Coalition to Restore Coastal Louisiana, 2019).

The Coalition to Restore Coastal Louisiana installed the first oyster reef of this variety in Biloxi Marsh, near the Mississippi border in 2016, and when sampled in 2019, three different sized classes of oysters were found, and erosion had slowed by half according to the restoration programs director of the Coalition to Restore Coastal Louisiana (Russell, 2019). In situations where marshland cannot be saved, a new mindset of transformational ecosystems and habitats has been adopted. Lands that were once marshes can be transformed into distinct ecosystems of their own.

A seven-year study conducted by Nichols State University and the Coastal Protection and Restoration Authority of Louisiana found that a mattress system of interlocking concrete armor units and an artificial reef design made from steel and recycled oyster shells would be the best industrially implemented option for preventing soil erosion at Pointe-au-Chien. Not only are oyster shells a plentiful resource in the bayou, but their use within the cage structure provides a more welcoming habitat for living oysters. This technique proved to be more effective than alternative methods of curbing shoreline loss and helped reduce harm to both the lands and the waters.

Federal Recognition

The Pointe-au-Chien tribe have been among the many caretakers of that land and corresponding history as a tribe with ancestry tying them to the Chitimacha as well as the Biloxi, Acolapissa, and Atakapa. The tribe currently resides in Terrebonne and Lafourche parishes, on the same location as a historical Chitimacha settlement (Fergusen, 2009). The tribe gained state recognition in 2004 and has been seeking federal recognition since the mid-1990s. Federally recognized tribes are “American Indian or Alaska Native tribal entities that are recognized as having a government-to-government with the United States, with the responsibilities, powers,

limitations, and obligations attached to that designation, and are eligible for funding and services from the Bureau of Indian Affairs" (Indian Affairs, n.d.). Pointe-au-Chien's main motivation to seek this recognition is for the aid and assistance provided by the United States government to federally recognized tribes. This assistance is especially needed in the wake of disasters such as Hurricane Ida and the Deepwater Horizon oil spill, which forced the community to contend with ecological, medical, and economic threats. Without recognition, the tribe says that "government entities often overlook and fail to address the issues facing [their] Tribal community" (Matherne, 2021).

CHAPTER THREE: Methodology

Introduction to the Approach

In this study investigating the roles played by hurricanes, erosion, petrochemical buildout, and tourism in climate-forced migration at Pointe-au-Chien Indian tribe, I took a participatory observation and participatory action research approach, collecting qualitative data through interviews, and tours of Pointe-au-Chien. Designing a research project as a white settler working within an Indigenous community requires acknowledgement that Indigenous forms of inquiry and monitoring are often situated in a cultural context that is different from the methodology of "western" or "northern" science (Adams, 2014). This chapter will begin with an outline on how I acquired funding, Human Subjects approval, and tribal consent, which will set the stage for discussion of bias and methodology for participant observation, interviews, and tours.

Funding, Human Subjects, Outreach, & Tribal Research Protocol

Before reaching out to potential participants or travelling to Pointe-au-Chien, I applied for Human Subjects Research Committee (HSRC) approval and Copeland funding. On April

14th, 2021, I submitted my HSRC application, and it was accepted on the 26th of that month. I was awarded funding by Henry J. Copeland Independent Study Fund Grant Awards Committee on April 14th, 2021, to support my travel down to Louisiana in May of that year.

In April of 2021, I reached out to the Lowlander center, a Louisiana-based organization that supports lowland people and places through education, research, and advocacy. With help from Dr. Kristina Peterson, the director of the center, I became connected to the Disaster Justice Network and learned more about Lowlander's initiatives within Coastal Indigenous communities. I joined several virtual Disaster Justice Network meetings, which significantly increased my awareness and understanding of disaster impact on coastal Louisiana and Texas. Dr. Peterson recommended that I reach out to tribes directly, so I sent emails out to several tribes in the area including Pointe-au-Chien. I heard back from Pointe-au-Chien first, specifically from Ms. Christine Verdin, a council member of the tribe. She remained my main contact with the tribe throughout the study and helped connect me to volunteer opportunities and tribal members interested in interviews.

I received permission to conduct research with the tribe after applying through the Research Protocol Agreement for the Pointe-au-Chien Indian Tribe, and signing the Project Collaborator Confidentiality Agreement, where I outlined how the data would be stored at the completion of the project/activity. All recordings will be sent to the individual interviewed and then discarded on my devices.

Potential for Bias / History of Indigenous Knowledge in Academia

As a white settler coming from an academic institution to conduct research with a Native community that I had no previous relationship with, investigating and addressing my own biases is crucial to conducting this study. It is also important to acknowledge that even academic works

that use language that honors Indigenous knowledge are still products of a system built off colonial violence (Bonneau, 2021).

There has also been a history of academia discounting and exoticizing Indigenous knowledge. For example, in fall 2021, anthropologists discovered evidence of human footprints in New Mexico made 23,000 years ago. This new date was far earlier than academic and anthropologic experts had originally estimated. Indigenous experts however, had been saying this to be true for years, just to be ignored by academia and the media (Gershon, 2021). Traditional academic methods value "progress" and discoveries for the sake of knowledge, while Indigenous ways of learning value the pursuit of practical knowledge in service of social and cultural goals. As a researcher working in an Indigenous context, it is important that I start from a subjective position rather than the objective stance that academia often celebrates (Gershon, 2021).

Respect for the landscapes and resources as integral aspects of a communities' experiences and knowledge systems is an important part of an engaged research approach with Indigenous communities. As a researcher coming from academia, where the study of Indigenous communities is often extractive and not focused on relationship building, it is vital that I reject that view and actively work toward relationship building and viewing Pointe-aux-Chenes as a part of a complex system that includes human communities (Heiltsuk Tribal Council, 2001). Academia emphasizes the importance of being impartial in order to collect unbiased data, but bias is omnipresent, even in the most best-intentioned research designs. Because the nature of participatory observation is learning through immersion, part of the process is relationship building, which is vital to the research, but inherently biased. In an effort to minimize the potential bias that my positionality and relationships with participants could bring, I asked

general open-ended questions to interviewees, had participants take the lead in starting conversations or tours, and developed standards for interpreting my findings that incorporated an awareness of alternative hypotheses and perspectives. These standards include actively looking for evidence that disproves my hypothesis and point of view and consulting with an outside party (research advisor) to challenge me to discuss the findings impartially.

Participatory Research (Action and Observation)

Participatory Action Research, also known simply as Participatory Research, integrates scientific inquiry with education and political action. In this research, I employed aspects of participatory research in my participant observation. Specifically, by including local and Indigenous knowledge, focusing on power and empowerment, and participating in small collective political action led by participants. The form of participatory research that I predominately used was participatory observation.

Participatory observation is a research methodology where the researcher is immersed in the day-to-day activities of the participants. Typically used in the field of anthropology, participatory observation involves interacting directly with the community studied instead of observing from a distance (naturalistic observation. There are four major roles of Participatory observation, and I chose to take a participant as observer approach. This means that both I, the researcher, and the participants, the tribal members I interacted with, were aware that our relationship stemmed from research activity (Roy, 1970).

This project was originally designed to take a participatory action research approach in addition to interviews, but after consulting with tribal leadership members, I learned that the capacity of tribal members to participate as partners in the research design and implementation

process was limited, especially after Hurricane Ida. The study was then redesigned to integrate participatory action research into a participatory observation approach. With that said, the methodology of this project did not fit neatly into either box. There are several aspects of participatory action research that align with the methodology I took, but most of the project centered around participating and living alongside members of the tribe. Through this method, I, the researcher, was the main instrument of data collection. Participatory observation research was conducted during this project through spending time living and working along tribal members. While I did not sleep overnight in Pointe-au-Chien, I drove to and from Pointe-au-Chien every day for a week in January 2022, where I volunteered at the tribal building. I organized and helped distribute food and supplies donations at the tribal building each afternoon which helped me build trust and rapport with folks and provided me with opportunities to share meals and conversation, as well as to observe community life. Since many tribal members visit the tribal building each day, I was able to meet over twenty-five people while I was there (over three percent of the tribe's population).

I translated this into an approach to observe the lands and waters and the interactions they have with each other as well as with the humans that live among them. This included observing the way folks in water-related livelihoods related to the lands and waters, as well as how the ecological systems in Pointe-au-Chien work, from the perspective of a human non-resident of the area.

The research question was chosen based on the expressed social-ecological needs of the Pointe-au-Chien tribe in the short term and the long term. On PACIT's website, it states "As indigenous peoples of the Terrebonne Basin, the fastest eroding area in the United States, we are at a crossroads of unprecedented change to the natural environment and adaptation to maintain

our unique tribal cultural heritage (PACIT, 2022).” The website proceeds to focus on six topics of social-ecological concern: Hurricane Ida, Federal Recognition, Coastal Erosion, Environmental Justice, the BP Oil Spill, and the Culture Camp, a children’s summer camp run by the tribe (Matherne, 2021). Since climate migration of Indigenous communities in coastal Louisiana is a current academic, socio-economic, and cultural concern (Davenport, 2016), I decided to investigate the roles played by hurricanes, erosion, petrochemical buildout, and tourism. Tourism and coastal gentrification were included after I first visited Pointe-au-Chien and observed how much fish and game tourism affected the tribe and the land.

Interviews

I conducted interviews with three Pointe-au-Chien Indian tribe members. With the current tribal population at about 750 people, I was able to interview just under 0.5% of the tribe’s population. This number is so low out of the respect for the decreased capacity of tribal members to share time and energy following the trauma of Hurricane Ida. This may result in insufficient findings on behalf of interviews, but the findings rely most heavily upon participatory observation.

Participants were found through my participatory research at the tribal building and through snowball sampling. All three participants were over the age of thirty and were involved in tribal leadership. Two participants lived in the Pointe-au-Chien bayou within tribal/family land during the time of the interview, and one participant lived in a suburb of Houma, about half an hour from the tribe during the interview.

Two interviews were conducted in person at the Pointe-au-Chien tribal building, and one was conducted virtually through the Zoom platform. Whether the interviews were in-person or not was determined by the participants comfort level with being inside the tribal building due to

COVID. While I spent time in Pointe-au-Chien in both May 2021 and January 2022, all formal interviews were conducted in January of 2022. Tours were taken in both May 2021 and January 2022, to become familiarized with the land and community, and to examine the effect that Hurricane Ida had on the community and on the lands and waters.

In-person interviews took place in the tribal building, where I was volunteering and meeting community members. Participants were informed of the interview purpose, procedures, risks, benefits, confidentiality practices and right to refuse or withdraw before the interview began. Interviews were recorded with consent with the Apple recording app. Online interviews took place over the Zoom app while I (researcher) was located in Ohio, and the participants were located in Louisiana. Online interviews were recorded through Zoom's meeting recording feature and saved on a password protected computer. In-person interview recordings were stored on a password-protected iPhone. Recordings were not transcribed verbatim, but detailed notes were taken, and pulled quotes from interviews.

Tours

Understanding the physical area of study and what the land, waters, and community looked like, especially within the context of hurricanes, oil and gas development, and tourism required in-person travel to and around Pointe-au-Chien. Traveling around the area in the form of tours became a crucial part of my data collection.

In May of 2021, I took two tours through Pointe-au-Chien, one guided by a PACIT tribal member, and one self-guided. I was able to tour with a PACIT tribal member after reaching out to her via her email listed on the tribal website and after meeting her for coffee. She offered to drive me around and give an informal tour. While the tour focused on Pointe-au-Chien, we also travelled on Island Road, the route to neighboring tribe Isle de Jean Charles. In January of 2022, I went on three self-guided tours through Pointe-au-Chien, one through Oak Point Road, the road

on the Lafourche side of the bayou, and two spanning from the northern end of Lower Highway 665 (also known as Pointe-aux-Chenes Road), to the southern end, where Pointe-au-Chien melts into water. Tours through and around the area were important to my understanding of the community, topography, industries, ecological systems, and the aftermath of storms.

CHAPTER FOUR: Theoretical Framework

In order to discuss my findings on Pointe-au-Chien's relationship to climate migration, I will utilize decolonial theory and environmental justice theory. Through these lenses, I will investigate how factors motivating climate migration in Pointe-au-Chien connect to the broader history and legacy of colonization as well as to environmental justice. The purpose of this section is to frame my discussion and analysis with a framework that addresses the intersecting causes of and responses to climate-forced displacement in Pointe-au-Chien.

Decolonial Theory: Territorial and Structural

Pointe-au-Chien has been shaped by the history and continued legacy of European settler-colonization, and therefore, understanding the theory surrounding this phenomenon is important to analyzing the findings of this study. In this section, I delve into definitions relating to decolonial theory, why decolonial theory is more fitting for this project than post-colonial, and how these ideas relate to Pointe-au-Chien's experience with climate change and displacement.

Important definitions:

Settler-colonialism – Distinct type of colonialism in which Indigenous populations are forcibly removed and erased so that a settler society can take permanently over the land for use (Veracini, 2015).

Settler[8] –Someone who occupies and asserts sovereignty over Indigenous lands. In the context of U.S. settler colonialism, a settler often has ancestry tying them back to individuals immigrating to the continent during active settler colonization. The term settler may also refer to anyone who is non-Indigenous to the land and whose ancestors were not brought to the country via human trafficking (slavery).

Traditional Ecological Knowledge - Traditional Ecological Knowledge (TEK), also known as Indigenous Knowledge or Native Science, refers to the evolving knowledge acquired by Indigenous and local peoples over hundreds or thousands of years through direct contact with the environment (Rinkevich, n.d.).

Epistemology - the theory of knowledge, especially with regard to its methods, validity, and scope. Epistemology is the investigation of what distinguishes justified belief from opinion.

Indigenous - Peoples with pre-existing sovereignty who were living together as a community prior to contact with settler populations and before the formation of colonial state borders. Indigenous peoples have maintained either wholly or partly their own social, economic, cultural, and political institutions (ILO, 1989).

[8] Colonization is incredibly nuanced, and therefore the definition of a "settler" is often disputed, but the important distinction is that settlers continually benefit from colonization and tend to be Anglo-American.

Native - General term that refers to individuals from a specific place. In the case of this paper, "Native" is used interchangeably with the term "Indigenous", and other than "Indian", is the term most often used by Pointe-au-Chien tribal members to refer to their ancestry and identity.

The United States is a settler-colony state, and while all people who live and have lived here have been impacted in some way by the legacy and violence of settler-colonialism, Indigenous peoples and communities such as Pointe-au-Chien live with constant reminders of how their land, culture, relatives, and nations have been stripped from them. In order to discuss climate migration within an Indigenous community, it is crucial to interrogate colonialism and the effects in has had and continues to have on the lands, waters, and peoples affected by climate migration. Because of this, I am approaching these topics with a lens that challenges colonialism. In this section, I unpack why I chose decolonial epistemology over postcolonial theory and speak to how this framework is relevant to this topic.

Decolonial theory focuses on deconstructing colonial structures, including the settler-colonial structures created and maintained in the United States. This includes critique of the superiority of Western/colonial culture as well as the systems of subordination structured in the U.S. The settler-colonial framework recognizes that the United States is a present-day settler-colonial society whose laws, institutions, and systems of government are maintained by the same violence against Indigenous, Black, and Immigrant communities that the country was built on (Kashyap, 2020).

Decolonial epistemology or theory was born out of liberation theology from the 1960s and 1970s as well as debates on Latin American modernity and postmodernity in the 1980s (Escobar, 2007, p. 179-180). It is often compared to post-colonial theory, which emerged during

the 20th century as an intellectual tradition, initially inspired by Marxism (Ashcroft, 2013). Walter Mignolo, a key Latin American decolonial thinker, explains that the point of decolonial thought is to decolonize knowledge and privilege the work of thinkers from the Global South instead of privileging western modernization (Mignolo, 2007). Ramon Grosfoguel, another Latin American decolonial scholar, points out that this does not mean that decolonial thought is inherently anti-European, but instead values the experiences and thoughts of those living through colonization (Grosfoguel, 2000).

In the simplest terms, post-colonial theory differs from decolonial theory (sometimes referred to as decolonial epistemology) because of postcolonial theory's emphasis on revealing the structural and social ramifications of colonialism, while decolonial epistemology seeks to actively dismantle systems of colonial oppression. Both fields of thought view colonialism as a practice rather than a metaphor. From a decolonial perspective, it is important to decolonize knowledge that is recognized as being colonial. (Mignolo, 2007).

I have chosen to use decolonial epistemology instead of postcolonial theory because decolonial theory takes postcolonial theory into account while also working toward dismantling the systems that postcolonial theory investigates. It is also important to acknowledge that the United States is not a post-colonial state because its colonial systems and structures are still alive and well today. The graphic below was created for "Decolonial Studies in Accounting: Emerging Contributions from Latin America", and depicts critical differences between postcolonial theory and decolonial epistemology.

	Postcolonial Critical Theory	Decolonial Epistemology
Epistemic Perspectives	Interdisciplinary Interculturality Pluralism	Transmodernity Transculturality Pluriversality
North-South Relations	Proposes the recognition of domination / subjugation / resistance / de-centering	Proposes a shift to delinking / detaching / liberation / autonomy
Scope	Scholarly transformation in culture and within academia	Detachment from the modern colonial world-system and geopolitics of knowledge
Approaches	Analytical cultural studies	Analytical and programmatic; cultural studies otherwise
Basic Concepts	Recognition of hybridity, mimicry, ambivalence, subalternity, epistemic violence	Active decolonization of knowledge, body, and mind; insurgency, epistemicide
Purpose	To explore, describe, explain evoke, provoke, unsettle	To evoke, provoke, unsettle depose, delink, reconstruct
Agentic perspective	Self-enlightenment to overcome the colonization of mind	Collective engagement to access self-empowerment
Methodological Stance	Defamiliarization, deconstruction discourse analysis	Border thinking, exteriorizing, non-extractivism
Main Contribution	Develops the vocabulary that de-centered Eurocentric thinking through enlightenment	Develops the praxis of insurgency and epistemic disobedience
Limitations	Aimed at "emancipation" assuming it would automatically lead to action	Has been misinterpreted as a potential return to "pure" pre-colonial knowledges

Figure 19: Sauerbronn, et al, 2021

As the graphic suggests, decolonial epistemology and postcolonial critical theory have many similar ideas that are executed differently – decolonial epistemology taking a more action-oriented approach. Because of this, the term "decolonization" is often used as a catch-all for any thought or action relating to critically examining colonization.

In an academic setting, reconsidering literature, coursework, and research practices rooted in colonialism and potentially replacing them with non-colonial perspectives can be defined as a "decentering" approach of decolonization. (Mohamed, 2020). Decentering aims to recognize the legitimacy of marginalized knowledge, which in the field of environmental studies, sociology, and ecology, may look like reconsidering commonly accepted research methods and diversifying literature. Since white, male, and generally hegemonic perspectives are the norm in

academia, adding the voices and experiences of Black, Brown, Indigenous, queer, female, poor, and other systematically oppressed authors is important to diversifying and "decentering." In the discussion section, I will touch on how decentering has been beneficial in the struggle to understand and address climate migration in Indigenous communities, but also how recognition of climate violence in Indigenous communities is only the first step in truly addressing the crisis.

An engagement view of decolonization calls on scientists and researchers to approach scientific practice from the margins, centering the needs and desires of marginalized communities in the design and research process. It also requires questioning where knowledge comes from, who is included and who is left out, and what assumptions may influence the research (McDowell, 2016). As a participatory researcher coming from an academic point of view, having discussion informed by an engagement view of decolonization is crucial because academia has traditionally not centered the needs and desires of marginalized communities in research design or in implementation of recommendations.

In the discussion of my findings, I will be using territorial and structural decolonial theory to inform my analysis. Territorial decolonization refers to the deconstruction/cessation of colonial relations, specifically in terms of land ownership and stewardship. In the case of this paper, it is important to acknowledge the practice of territorial decolonization within Indigenous-led movements such as Landback[9], which aims to facilitate the return of land to its original stewards. Since territorial decolonization in the form of land repatriation to tribal members on the Terrebonne side of the bayou, I will be discussing territorial decolonization in this framework to support the discussion of my findings.

[9] **LandBack** is a campaign that seeks to give back power and protection over lands that Indigenous people in the United States and Canada had historically lived with and stewarded prior to colonization (Thompson, 2022).

Land restitution or "LandBack" is defined differently depending on who you ask. For the sake of this framework, I am categorizing land restitution as a form of territorial decolonization. This process requires settlers to repair the harm colonialism and continued coloniality inflicts on Indigenous people by returning control of ancestral territories back to its stewards. Transferring wealth and power back to Indigenous people supports Indigenous sovereignty. This wealth and power include the lands, waters, natural resources, and infrastructure on ancestral territories (Belfi, 2021).

In my research, structural decolonization was more evident as a tribal priority in the form of language and culture revitalization as well as returning to historic land and water management practices. I will be focusing on structural decolonization as a framework that seeks to undo colonial mechanisms of power, language, culture, and thinking within society (in this case, within and beyond Turtle Island or North America). Structural decolonization interrogates the origins and legitimacy of narratives, dominant/colonial forms of knowledge, values, norms, and assumptions rooted in colonial practices (Mohamed, 2020).

Environmental Justice Theory

Environmental justice is regarded as a movement, a field of study, and a theory that informs both the movement and field of study. For the purposes of this research paper, I have investigated my topic through the lens of environmental justice theory and have a background in environmental justice movement activism as well as environmental justice study in academia. In this section, I will be outlining the definitions and principles of Environmental Justice that have guided this project and will guide my discussion.

Important Definitions:

Frontline Communities – Predominately communities of color and low-income communities, frontline communities are those that experience the "first and worst" consequences of climate change (President, 2017).

Climate Migration – Climate migration is the movement of people temporarily or permanently relocating because of environmental violence such as natural disasters, devastating pollution, or ecosystem change. Climate migrants flee unbearable conditions just as refugees do, but are often not afforded the same legal protections (Podesta, 2019).

Climate Vulnerability – The susceptibility of individuals and communities to the negative effects of climate change and other related stressors.

Environmental justice theory proposes that social and environmental landscapes are inextricably linked and that environmental decisions should be made using fair processes that engage and recognize the needs of marginalized communities, specifically Black, Indigenous, POC, and poor communities (Hornick, 2016). The United States Environmental Protection Agency (EPA) definition highlights the terms 'fair treatment' and 'meaningful involvement' of communities in regard to the development, implementation and enforcement of environmental laws, regulations, and policies, but does not acknowledge that marginalized communities are more impacted. Because of this omission, this paper is more aligned with environmental justice definitions written by representatives of communities directly impacted by environmental

injustice. The principals of environmental justice, as defined by the First National People of Color Environmental Leadership Summit in 1991, are an integral part of the theoretical framework that guides this paper.

The first principle acknowledges the sacredness and inherent worth of the planet and all within it while considering both human and nonhuman organisms, which is important when discussing climate and environmental change, "Environmental Justice affirms the sacredness of Mother Earth, ecological unity and the interdependence of all species, and the right to be free from ecological destruction." The right to be free from ecological destruction will enhance conversation on environmental degradation and disaster at and around Pointe-au-Chien. Colonial views of nature are extractive, and nature is valued with monetary equivalents. For example, even recreational land uses of nature in the United States, such as national parks, often requires payment to access.

While there are no national parks near Pointe-au-Chien, there is a wilderness management area and land use in the area ranges from residential to oil and gas extraction. "Environmental Justice mandates the right to ethical, balanced, and responsible uses of land and renewable resources in the interest of a sustainable planet for humans and other living things." This principle speaks to how many land uses are not in the interest of a sustainable and healthy planet for the organisms that live here. With that said, extractive land-use practices are common, and often are within industries that provide jobs and have shaped the socio-economic landscape of an area. Uses of land (and water) in Pointe-au-Chien include oil and gas exploration, tourism, trawling/fishing/shrimping/crabbing, infrastructure, residential and commercial development, and hunting. In the past, land use in Pointe-au-Chien also included sugarcane plantations. These

land uses are not ethical, balanced, or responsible in many ways, and I will go into further detail on the nuance and intersections between types of land use in Pointe-au-Chien in the discussion.

The environmental and human cost of unethical land use is also an environmental justice issue, with the fourth principal calling for universal protection from nuclear testing, extraction, production and disposal of toxic/hazardous wastes. Any practice that threatens the fundamental right to clean air, land, water, and food, fall within this principle. Because of the great potential for harm that the extraction, production, and disposal of toxic/hazardous wastes, protection of lands, waters, and organisms is important. The economic, social, political, and physical landscapes of Pointe-au-Chien and Louisiana as a whole have been shaped by extractive industries, specifically oil and gas extraction. This principle asserts that this is an environmental injustice. This principle will show up in discussion of how the oil and gas industries have impacted the lands and waters of Pointe-au-Chien as well as the community and the state of climate migration in the area.

The oil and gas industry presents significant health risks in the form of environmental hazards to those employed by the industry. The eighth environmental justice principle outlines how this doesn't protect the rights of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. Because of socioeconomic limitations, tribal members often have few career options that do not present environmental risk, which as the principle states, leads folks to be forced to choose between an unsafe career and poverty.

Those impacted by environmental hazards and injustice at work or at home have the right to receive full compensation and reparations for damages as well as quality health care. This is the nineth Environmental Justice principle. Communities devastated by hurricanes and oil spills

are considered victims of environmental injustice, and Pointe-au-Chien has been affected by both. While this study does not focus explicitly on reparations and full compensation, the lack thereof for the Pointe-au-Chien tribe is a crucial part of the story of environmental injustice in the bayou. In the discussion, I will touch on the connection between a lack of compensation and reparations after events of climate violence and climate migration.

As a tribe currently fighting for federal recognition, the eleventh principle of environmental is an important affirmation that Indigenous sovereignty, justice, and self-determination are integral parts of environmental justice. "Environmental Justice must recognize a special legal and natural relationship of Native Peoples to the U.S. government through treaties, agreements, compacts, and covenants affirming sovereignty and self-determination." In the discussion I will use this principle and decolonial theory to explore how broken treaties, agreements, and laws have impacted the tribe's ability to protect themselves from climate violence and climate migration. I will also explore how the nuance and irony of federal recognition process is a direct product and example of colonial violence.

Environmental Justice affirms the need for urban and rural ecological policies to clean up and rebuild our cities and rural areas in balance with nature, honoring the cultural integrity of all our communities, and provided fair access for all to the full range of resources. As a rural community that has historically not been included in several state initiatives for climate resilience and adaptation, Pointe-au-Chien has not had the same experiences as more populous, wealthy, or white communities with rural ecological policies that honor cultural integrity or provide fair access for all to the full range of resources.

Conclusion

Environmental justice outlines why and how certain communities are more susceptible to environmental degradation and harm than others. The environmental justice movement is an international, multi-racial, multigenerational effort that acknowledges the connection between environmental degradation and the health and wellbeing of people, and works for social, economic, and climate justice for all. Pointe-au-Chien tribal community is faced with immense environmental degradation, socio-economic oppressions, and the risk of losing traditional ecological knowledge and cultural traditions. These intersections weave a story of deep environmental injustice, and this project requires an environmental justice lens to adequately understand and discuss climate-forced displacement in Pointe-au-Chien.

CHAPTER FIVE: Findings and Discussion

Introduction:

Finding home in the space between solid land and open water, Pointe-au-Chien Indian tribe is fighting for survival amidst climate change. In this study I sought to investigate what environmental, social, and economic conditions influence Pointe-au-Chien tribal members' ability to stay on their ancestral land. I hypothesized that tropical storms, coastal erosion, tourism, and oil and gas development all directly initiate climate-forced displacement of tribal members. Based on what I found in my context and history chapter research, I anticipated that contributors would speak to the connections between each of the factors I was investigating (hurricanes, oil & gas, tourism, erosion). Many of the participants did discuss intersections - but when I asked about contributing factors to climate displacement, hurricanes were cited again and again as the prominent reason for migration.

This research also aimed to explore how the Pointe-au-Chien tribal community responds to climate violence, using Hurricane Ida as a case study. Participatory observation revealed that

tribal members who are able to stay in Pointe-au-Chien rebuild, practice mutual aid, prevent future land and home loss, support survivors of the storm, build coalitions and resilience networks, and sustain cultural and linguistic traditions.

In this chapter, I analyze the data gathered from semi-structured interviews with Pointe-au-Chien tribal members and from participatory observation at the Pointe-au-Chien tribal building and throughout the Pointe-aux-Chenes area. Important to interpreting and analyzing these findings are the complex histories and intersections of climate change, settler-colonialism, oppression and violence against Indigenous peoples, resource extraction, and environmental injustice.

When You Choose to Stay Amidst the Growing Threat of Climate Forced Displacement

Why do Pointe-au-Chien tribal members stay in Pointe-aux-Chenes despite the growing threat of climate forced displacement? The answer is rooted in culture, history, community, familiarity, and determination to not be displaced. The Pointe-au-Chien Indian tribe and their ancestors have called this bayou their home for generations, and the land has been stewarded by Indigenous peoples for millennia. This attests to the deep and complex relationships between the Pointe-au-Chien tribe and the bayou ecosystem, as well as to their expansive ecological knowledge and familiarity with the land. If enough tribal residents relocated, or if the entire tribe had to relocate, this ecological knowledge would not apply to their new environment. All familiarity and relationship with the bayou's lands, waters, and organisms would be lost. This relationship to the land is woven into the tribal culture, so much so that tribal members worry that they would also lose their traditions such as sustenance fishing in the bayou if they were

displaced. Ecological knowledge, relationships to the land, and place-based traditions motivate Pointe-au-Chien tribal members to stay in Pointe-aux-Chenes.

The close-knit tribal community and extensive family history also contributes to folks staying in the tribal area. When asked whether he sees himself ever leaving Pointe-au-Chien, senior tribal chairperson, Charles "Chucky" Verdin replied, "I ain't going nowhere". He went on to explain that he couldn't see himself living somewhere without water because he enjoys fishing and was "raised on the water". He joked that "sometimes there's too much water" - a reference to hurricanes. He also cited the community as a main factor keeping him in the area (C. Verdin, personal communication, January 13, 2022). Cherie Matherne, tribal building manager and lifelong PACIT triber, echoed this sentiment, saying,

> This is our home. Many of us were born and raised here, grew up here. We feel a connection to the land because I mean, this is where our ancestors were from, this is where our families live. We work here, we work on the waters here, we grew our families here, this is something that's home. After the storm, my husband asked me, "well what do you want to do, do you want to go back down [to Pointe-aux-Chenes] and rebuild, or do you want to move somewhere farther up?" I was like, I can't leave here, it's a totally different atmosphere even just going up the road. Here], everybody knows everybody, everybody watches out for everybody.
>
> (C. Matherne, personal communication, January 14, 2022)

This quote emphasizes the deep relationships within and across the Pointe-au-Chien tribe that keep members connected to the area. Familiarity with the community, culture, and land is a significant factor in staying in Pointe-au-Chien despite climate violence.

Even with the threat of hurricanes, Ms. Cherie reiterates how much she and others in the community desire to stay, “Maybe someday we are going to have to move. But they’re gonna have to pull us out of here kicking and screaming before that’ll happen.” This determination to stay on ancestral land also applies in situations where tourism and coastal gentrification interfere with the tribe.

When Your Ancestral Homeland Becomes a Tourist Haven

“[This land] was so harsh, [settler-colonizers] didn’t think people could make it here, so they pushed the Natives down here, and we made it into something. And they see that, and then now, they want some of that too.” - Cherie Matherne (2022).

> Cherie Matherne speaks to how tourism and coastal gentrification is only possible in Pointe-aux-Chenes because of the centuries of Indigenous land management and infrastructure.

Historical forces of displacement such as the Indian Removal Act pushed Indigenous peoples farther into the bayous – an area deemed not desirable by colonial-settlers. Two hundred years later, settlers now desire to vacation and move to the land they once dismissed as unlivable, potentially displacing Indigenous folks along the way. According to tribal members, the land only became “livable” or “desirable” after Indigenous folks cultivated and lived with it. I found it interesting how this historical displacement paralleled the recent push for coastal gentrification and hypothesized that tourism and coastal gentrification forcibly displaced Pointe-au-Chien tribal members. The findings revealed that while no contributors knew of examples of forced displacement relating to gentrification or tourism, they knew of many efforts of outsiders to buy homes owned or occupied by tribal members. This resulted in tribal folks becoming more determined to stay on their land and not sell to anyone outside of the tribe. While my hypothesis

was not entirely supported by the findings, tourism and coastal gentrification came up as a factor relating to climate displacement throughout interviews, tours, and participatory observation. The presence of tourists and new, non-Native residents of Pointe-aux-Chenes have elicited mixed reactions from Pointe-au-Chien tribal members. Every interview contributor I spoke with expressed that they did not oppose the presence of tourists enjoying the lands and waters of Pointe-aux-Chenes but were displeased with how the tourism industry impacted their lives and the environment. While tourism and coastal gentrification in Pointe-aux-Chenes aims to displace tribal residents, the pressure this puts on residents reinforces their desire to stay. This movement of potential displacement echoes historic forced displacement of Indigenous communities in coastal Louisiana and beyond.

Pointe-au-Chien is separated into the Terrebonne parish side of the bayou (Pointe-au-Chien Road) and the Lafourche side (Oak Point Road). While touring both sides of the bayou, I observed visible differences in home quality and aesthetic. Homes that can be categorized as products of coastal gentrification were visibly newer, with updated roofs, siding, and porches. Tribal contributors who gave me tours differentiated between tribal homes, tourist camps, and gentrified homes based on their local knowledge of the area and the aesthetic of the home. The Terrebonne side of the bayou is not entirely occupied by Indigenous peoples, as the Lafourche side is. It includes tribal/family land, tourist camps, and homes bought and occupied by recent Louisiana transplants.

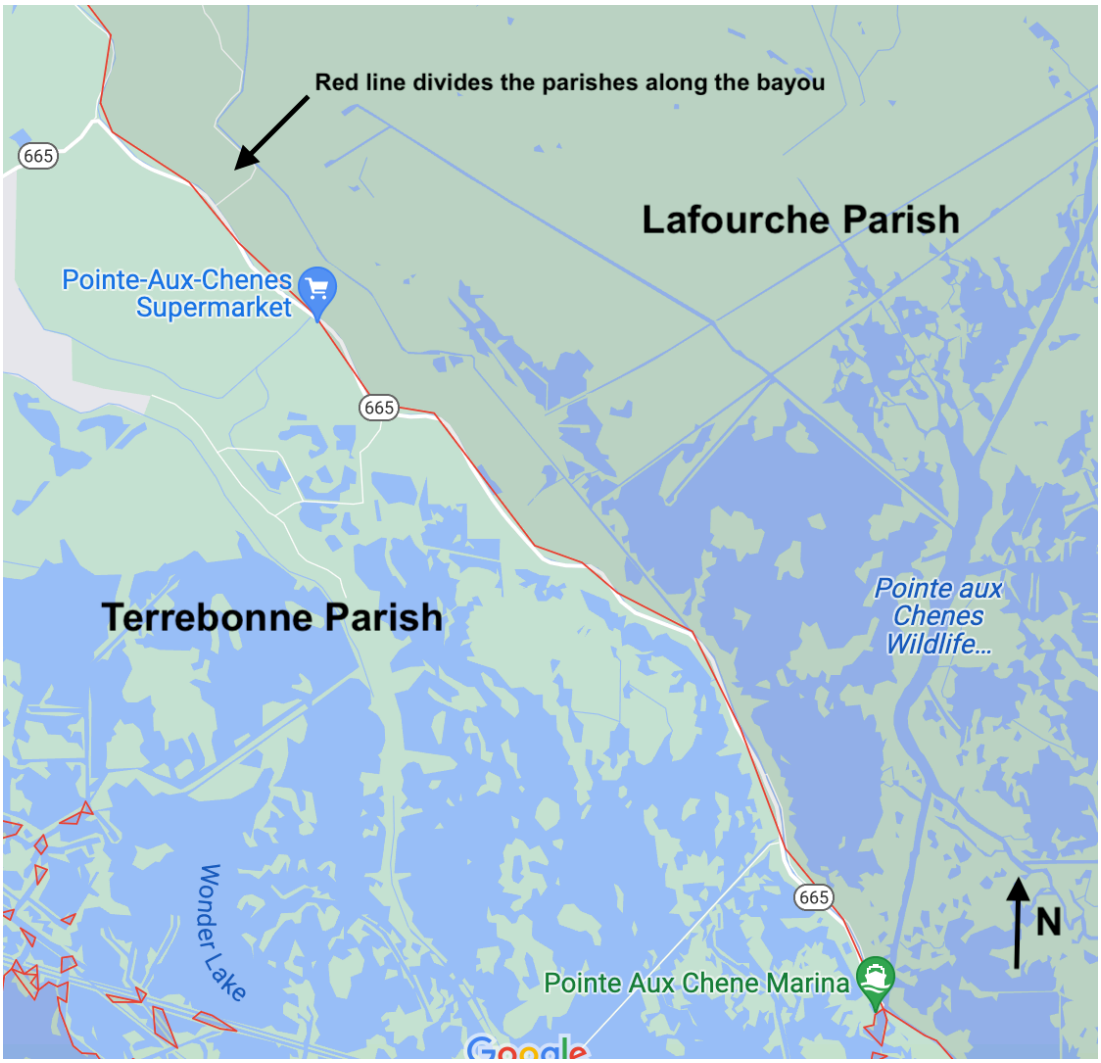

Figure 20: Map depicting Terrebonne and Lafourche parishes

Driving down Lower Highway 665, also known as Pointe-aux-Chenes road, it is hard not to notice the juxtaposition between the homes converted into vacation cabins (or camps as they are colloquially known), the homes bought and refurbished by outside non-tribal members, and the homes that tribal members live in. Vacation camps can be distinguished by "for-rent" signs, vacation home "names" along the lines of "Camp Bayou Paradise," and driveways with out-of-state cars. From interviews, it seems like tourists and coastal gentrifiers are from other southern states as well as from around the country. I observed these properties separating family land into "checkerboard" parcels, which seemed to restrict the ability of tribal members to live

communally. A concern shared by tribal members encompassing both tourism and coastal gentrification was the suspicion that settlers wanted to push them out of the land and replace them. This displacement would be an example of recurring territorial colonization, where the descendants of early settlers continue the pattern of claiming Indigenous land as their own.

Developers and individuals looking to build tourist camps in Pointe-au-Chien often try to buy homes or properties from Pointe-au-Chien tribal members, which acts as a potential cause for relocation, but interviews and observation revealed that this pressure makes tribal members want to stay more. Cherie Matherne disclosed during an interview that when her aunt put her Lafourche parish home up for sale, every potential buyer was from out of state. After realizing that none of the potential buyers were from Louisiana let alone from around Pointe-au-Chien, Cherie's aunt took the house listing down and decided to give the property to her son's mother-in-law instead. This was an effort to keep the property within the family and within the tribe as well as to keep the Lafourche side of the bayou Native.

As suggested in the previous paragraph, some of the main concerns of tribal members were that the tourists were disruptive to their community, playing loud music into the night, littering, and trying to buy homes to turn into rentals. One interviewee reported that she did not think that the tourists respected the lands and waters in the ways that the tribe did, which was upsetting given that the tribe has stewarded the lands and waters for generations. This land management has looked like tribes adapting to the ebb and flow of the Mississippi instead of rerouting it, sustenance hunting, and controlled sugarcane burns (Cooley, 2013). This is important because the tourists are hunting and fishing on land that has been managed by Indigenous people, yet are simultaneously contributing to the degradation of the land and the creation of a hostile environment for the land stewards. This is reminiscent of patterns of

environmental injustices across the country where Indigenous land stewards no longer have access to their ancestral lands as a result of tourism. In the case of National Parks, Indigenous communities have been historically displaced in order to make way for tourism and colonial land management techniques (Colchester, 2004). The environmental consequences of this have come to light recently as the lack of Indigenous land management has resulted in dangerous environmental conditions (Gershon, 2020).

Coastal gentrification, the practice of non-historic residents buying homes from historic coastal residents in order to "flip" them or live in them as a first or second home, has been received similarly. While tribal members understand why non-locals want to live in their ancestral home, they are concerned about potential buyers pressuring older tribal members to move and are concerned about disruptions to the community. and the fact that gentrified homes are better equipped to handle hurricanes because their owners are wealthier.

My findings indicate that coastal gentrification, like tourism, does not directly lead to forced displacement, instead pressures Pointe-au-Chien tribal members to stay so that they can keep their community intact. This is not in alignment with my expectations based on territorial colonization theory, but the pattern of non-Natives benefitting from Indigenous land management and then displacing Native folks from that land is consistent with environmental injustice. Efforts to potentially displace Pointe-au-Chien tribal residents and the disruption and disrespect exhibited by tourists and coastal gentrifiers do not allow for the environmental, economic, or cultural self-determination of the tribe.

While some Pointe-au-Chien tribal members are successful in keeping their homes or land within the tribe, many properties have been sold over the past few decades to non-tribal members that are often relocating from out of state or buying a second home. Tribal members

who sell homes are predominately older individuals or couples, according to participatory observation contributors. In line with the characteristics of gentrification, these new residents have more capital than their longtime resident neighbors, which means that gentrified homes are rebuilt faster after hurricanes. In the case of Hurricane Ida, these non-tribal homes were some of the first to be rebuilt or fixed, as confirmed by tribal members' observations. The financial burden of temporary relocation, rebuilding, and finding employment after a tropical storm is a force pushing Indigenous folks out of Pointe-aux-Chenes.

When the "100-year storm" Starts Appearing Every Decade

While my findings suggest that there are several factors that influence tribal members' ability to stay in Pointe-aux-Chenes, hurricanes and tropical storms were the main reason that Pointe-au-Chien tribal members consider or are forced to relocate. Hurricanes are becoming more frequent and more intense as a result of climate change and have become the largest force of climate displacement for the Pointe-au-Chien tribe. Moreover, promised relief programs and funding provided by the government and insurance companies did not come through, leaving the community to fend for itself, which gave some community members little choice but to leave. The governmental response to Hurricane Ida was environmentally unjust as it did not provide appropriate compensation, reparations, or health care to the community. Using Hurricane Ida as a case study, the findings revealed that hurricanes cause emotional, physical, infrastructural, environmental, and cultural damage, all of which affect Pointe-au-Chien residents' decisions to stay or leave.

Hurricane Ida and other recent storms have been more severe and frequent than hurricanes recorded in the 19th and 18th centuries as a result of climate change. Colonization and

consequent industrialization continue to cause global warming and climate change, leading to the conclusion that colonization drives climate violence (Bennett, 2019).

Hurricane Ida devastated Pointe-au-Chien. Touring the bayou after the storm in January 2022, versus the first time I visited Pointe-au-Chien just six months before, was a drastically different experience. In my first visit, I saw homes that had been abandoned or still in disrepair after previous tropical storms, but none of those slowly sinking or quietly decaying structures prepared me for the mass destruction and violence of Hurricane Ida. Homes previously adorned with "Indian Pride" flags and bouquets of plastic flowers, were reduced to skeleton frames. Roofs caved in, possessions strewn across yards, streets and canals, staircases demolished by the mere strength of the wind, all made the small bayou community almost unrecognizable. When asked about the biggest reason tribal members are leaving, Chucky Verdin said "I think it's mostly the hurricanes. People are tired of rebuilding, they build their houses high every so often because of the flood. I think that's one of the major pushes (C. Verdin, personal communication January 13, 2022)." During participatory observation at the tribal building, I heard residents compare the damage done to their homes. One woman spoke of how the family photos on the wall of her living room ended up four rooms away, underneath what once was her kitchen table. Another commented on how the same thing had happened with her son's toys, except they were found only two rooms away, hidden under the wreckage. Fishing boats that were not tied up correctly before the storm floated away or were destroyed, putting many families' sole source of income in jeopardy.

Figure 21: A home on Pointe-aux-Chenes road after Hurricane Ida

The majority of the tribal members I interacted with temporarily relocated inland after the storm to stay with family members, in a hotel, or in an RV. More than half of them were still living in unstable housing when I spoke with them in January 2022. This temporary displacement prohibited many from working in their previous jobs close to the bayou, and even those working virtually were faced with challenges, as the internet was not restored for months after the storm. Ms. Christine Verdin recalled how one tribal member was enrolled in a local community college when the storm hit. All of the students' classes were put online, which would have been helpful except the only place that tribal member could find Wi-Fi was a coffee shop thirty minutes away from where she was staying, and most days she could not find or afford

childcare for her daughter. This is just one example of the complex challenges faced by Pointe-au-Chien tribal members in the wake of the storm.

Even four months after Ida hit, it was evident that individuals and families in the tribe were still reckoning with the emotional toll of the storm and its consequent destruction. Tribal members noted how their children struggled more with school after the storm, how they felt overwhelmed with all the work and money required for rebuilding, and how difficult it was to find secure and affordable temporary housing. The lack of support from FEMA and other government and flood insurance relief programs resulted in the need for the tribe to conduct grassroots community organizing. This added an additional burden onto tribal members that were already reckoning with emotional, financial, physical, and environmental loss. Finding and accessing existing relief programs was difficult because most relief programs were located in more populated areas, and as a non-federally recognized tribe, PACIT did not have direct access for FEMA representatives. Tribal members reported that many of their flood insurance claims were ignored and those that did receive insurance benefits, were disappointed but not surprised at the lack of follow-through and funding on behalf of the insurance agency.

The principles of environmental justice protects victims of environmental injustice with "full compensation and reparations for damages as well as quality health care." As a frontline community to the environmental violence of climate-change exacerbated storms, the PACIT did not receive the compensations, reparations, and health care that they needed. These broken promises echo the U.S. government's plethora of broken treaties, agreements, and laws promised to protect Indigenous Americans. To fill in the gaps created by the lack of promised support, the tribe had to rely on donated food, money, time, housing, and necessities. This initiative was organized by the tribe itself and was a vital part of the relief and recovery of Pointe-au-Chien.

Participatory observation in the tribal building informed many of my findings regarding Pointe-au-Chien tribal members' resilience and efforts toward organizing a more livable future, as will be discussed toward the end of this chapter. Meeting over twenty-five tribal members as they came in to shop in the free store for food, clothing, and conversation, gave me insights into the trauma caused by the hurricane.

Figure 22: Donations inside the tribal building's free store

Figure 23: Food Donations in the Pointe-au-Chien Tribal Building After Hurricane Ida

It is evident that the temporary displacement of tribal residents after a storm, especially after one as destructive as Hurricane Ida, causes significant social and emotional trauma. The disruption of leaving your home in anticipation of a hurricane is stressful enough, but the devastating reality that your home is damaged or destroyed, along with all your possessions, inevitably leads to emotional and mental distress. This compounds with the financial burden of temporary relocation, job loss, and the cost of rebuilding or moving. For some tribal members, this is a turning point.

The Guardian Newspaper interviewed Earline Naquin, a tribal elder and sister to Charles "Chucky" Verdin, the senior chairperson of the tribe, soon after the storm hit. She stated that due to her age and the expense of constantly rebuilding and repairing her home, she planned to move

out of Pointe-au-Chien permanently (Laughland, 2021). This sentiment speaks to the ability of hurricanes to displace tribal members from their ancestral land.

Throughout data collection, the economic toll of dealing with hurricanes was a common theme. Repairing a home after damage caused by Hurricane Ida costs between $350 and upwards of $50,000 per property, and with labor and material shortages, those costs continue to increase. The cost to completely rebuild a home, which is what many tribal residents are faced with, is upwards of $100,000 (Kasakove, 2022). The Pointe-au-Chien community is already impoverished as a result of few job opportunities and low education levels because of educational segregation, and a history of colonization. The steep price of these repairs has the potential of forcing tribal members to relocate.

When the Hand that Feeds You Bites Back: Oil and Gas Development as a Job Creator and Environmental Threat

The financial toll of hurricanes and other major weather events is compounded by the environmental and economic damage caused by the oil and gas industry. From my preliminary research into oil and gas development in the state, it was evident that canal dredging, oil spills, land, air, water contamination, and emissions all contributed to significant environmental harm to humans and non-humans residing in Louisiana. Given this context, I hypothesized that oil and gas development in and around Pointe-aux-Chenes directly contributed to climate-forced displacement of Pointe-au-Chien tribal members. Similarly to my findings regarding tourism and coastal gentrification, it is now evident that oil and gas development contributes to climate change and environmental degradation, indirectly influencing climate displacement, but not acting as a direct factor.

Figure 24: Oil and Gas Infrastructure in Pointe-au-Chien

One reason that residents stay despite the environmental health risks posed by oil and gas is the economic opportunities presented by the industry. Oil and gas extraction and development are an integral part of Louisiana's economy, and by proxy, has infiltrated virtually every aspect of life in Coastal Louisiana including Pointe-aux-Chenes. The oil and gas industry has provided hundreds of thousands of jobs for Louisiana residents, employing 249,800 people in 2019 (ICF, 2020). Pointe-au-Chien's predominant employer has traditionally been the fishing (and shrimping, crabbing, and trawling) industry, and pre-colonization and capitalism, sustenance fishing was the way of life for the tribe. The oil and gas industry emerged as other colonially supported extractive industries such as coal and metals came to be, violently disrupting the relationships Indigenous communities had established with the earth. This form of corporate

"manifest destiny" had a very similar effect as Manifest Destiny itself, creating environmental harm as well as forced displacement. Oil and gas development, along with climate change and globalization, is changing the way tribal members live and work, as well as where they can live.

Being from the Pointe-au-Chien Indian tribe is no longer synonymous with being a bayou fisherman, as it once was. Canals opened by the oil and gas industries as well as by commercial fishing companies, have progressively eroded, bringing saltwater from the open ocean into the freshwater marshes, and widening canals dramatically. For tribal residents, this change is palpable. Christine Verdin, a tribal council member, grew up on the land next to the Pointe-au-Chien tribal building. During an interview, she explained to me that in her childhood, she remembers a canal small enough to jump across in her backyard. When she took me on a tour of Pointe-au-Chien in May 2021 and again in January 2022, she shook her head in disbelief of the width of the canal. Over ten feet across, the canal is no longer crossable without a boat, and the likelihood of continued erosion scares her.

Canal and erosion initiated saltwater intrusion creates brackish water, which is not an ideal or livable environment for organisms accustomed to either saltwater or freshwater. Fisherman now struggle to find the same fish species that they have known to live there for generations because the biodiversity of the region has changed. They also struggle to find the landmarks that once indicated where fish and other animals often congregated, because so much land has eroded. Trees that once thrived in the freshwater marsh are now dead, acting as a constant reminder that erosion has touched every aspect of life in Pointe-aux-Chenes.

Figure 25: Trees killed by brackish water in Pointe-au-Chien "pointe-aux-chenes", Paul Goyette (2008)

Chucky Verdin's first career was in the fishing industry, and when asked about what he thinks the industry will look like in the future, he spoke to the loss of estuaries due to erosion and saltwater intrusion presenting challenges. "Once the gulf and the lakes keep on opening up, you aren't gonna have any more estuaries (C. Verdin, personal interview, January 13, 2022)." When I asked how long he thought it would take for the estuaries to disappear, he said, "hopefully not in my lifetime, but it depends on storms. If you get a couple more storms like the one we had last year, [they] are gonna destroy this area a whole lot quicker than if [the water] went out naturally. The hurricanes destroy the marsh, it accelerates everything (C. Verdin, personal interview, January 13, 2022)."

Another factor making it difficult for fishermen to continue in the fishing industry is the effect of globalization. Imported fish, especially imported fish, have reduced the cost of Louisiana shrimp. For “Chucky” Verdin, this was one factor in facilitating his career switch from trawling to working in the oil and gas industry. He also cited growing challenges in the industry as one reason some folks leave Pointe-au-Chien. “Some people move out because you know the commercial fishing is a little bit harder to do now so people find jobs other places and they move on”.

After the 2010 BP oil spill, Chucky and other tribal fishermen were recruited to work on oil cleanup. This was a lucrative option considering that the oil spill made it nearly impossible to find fish, let alone sell them, and because growing up on fishing boats meant that skills easily translated to oil and gas industry boats. Chucky said that this was hard work sometimes, but that luckily Pointe-au-Chien was not as devastated by the spill as places in Barataria Bay. He stated that while oil and gas companies contribute to erosion, they also create a lot of jobs in the area, especially for former fishermen. Many former tribal fishermen get jobs on oilfield boats and are known to rise in the ranks quickly due to their knowledge of the water and working on boats. Chucky got a job working on an oilfield boat after 2010. This required him to work in and around Houston, and then commute back to his home in Pointe-au-Chien whenever he had time off. According to Chucky and other oil and gas industry employees I met, working in that field allows for more flexibility in where you can live compared to fishing, which requires that you stay around a particular area. This was the only factor found that suggested that the oil and gas industry directly contributed to tribal members leaving the area.

The conclusion can be drawn that the oil and gas industry provides jobs for tribal members who are no longer able to work in the fishing industry because of environmental

damage caused by the oil and gas industry. On top of that irony, oil and gas jobs have been increasingly unstable due to corporate downsizing, the COVID-19 Pandemic, and the volatility of the industry. A 2020 University of Houston study revealed that 53% of oil and gas workers surveyed highlighted job security as a concern (Kever, 2020).

Fishing, specifically subsistence fishing is an integral part of Indigenous bayou culture in coastal Louisiana. The environmental damage caused by the oil and gas industry has jeopardized this historic way of life, while contributing to the climate violence that threatens to displace the community. The production of oil and gas, as well as the lack of accountability regarding detoxification and containment and the point of production, is environmentally unjust. The oil and gas industry pushes out other industries such as fishing, giving residents little choice but to join the industry. These jobs present environmental health risks, but when there are no other career options, this is a risk Pointe-au-Chien tribal members must take. This phenomenon violates the eighth principle of environmental justice, that affirms, "the right of all workers to a safe and healthy work environment without being forced to choose between an unsafe livelihood and unemployment. It also affirms the right of those who work at home to be free from environmental hazards." The latter part of this principle speaks to the fact that working from home in Pointe-aux-Chenes is also environmentally unjust.

While hurricanes remain the dominant and most indisputable reason for displacement of Pointe-au-Chien tribal members, the story of climate forced displacement in this coastal community is nuanced and increasingly complex. The role of the oil and gas industry impacts erosion, which leads to fishing industry challenges, which in turn leads people to work in the oil and gas industry instead and move away from Pointe-au-Chien.

Resistance and Resilience

Despite the environmental, social, and economic threats facing the Pointe-au-Chien Indian tribe, every tribal member I met expressed that they intend on staying on their ancestral land. Climate change poses a huge threat to the community and to the ability of residents to stay on the land, but their determination to continue living in Pointe-au-Chien has transformed into action. Solidarity and charity initiatives helped keep tribal members afloat in the following Hurricane Ida. Initiatives to sustain and cultural and linguistic traditions keep tribal members rooted in their history, community, and shared experiences. Community support for tribal members working in the fishing industry, oil and gas industry, and other sectors has kept the community united even with the environmental and health implications of the oil and gas industry. Climate adaptation and mitigation practices continue to slow the advance of erosion and sea level rise.

Campaigns to change local state and federal policy show promise of more robust protections of coastal Indigenous communities, and Pointe-au-Chien's fight for federal recognition continues. This can be categorized as both a movement for environmental justice and for structural and territorial decolonization. Movement building is also evident in Indigenous coalitions and solidarity initiatives that have brought hope and illuminated the power of connection between peoples, lands, and movements. The tribe describes itself by providing insight to its rich history, context to the challenges faced, and efforts toward maintaining unique tribal cultural heritage. The Pointe-au-Chien website opens with this sentiment,

> We are a proud and resilient people who continue to occupy the territory of our ancestors. As indigenous peoples of the Terrebonne Basin, the fastest eroding area in the United States, we are at a crossroads of unprecedented change to the natural

> environment and adaptation to maintain our unique tribal cultural heritage... We invite you to support us in our efforts to protect our sacred sites and traditional territory, to maintain our culture and traditions, including our Indian French language, and to support our efforts to obtain federal recognition from the United States government (PAC Tribe, 2009).

I explored how the Pointe-au-Chien Indian tribe responded to Hurricane Ida through collecting donations and finding common ground in shared Hurricane experiences. These findings were gathered predominately through participatory observation at the tribal building and with the disaster justice network, as well as through research into Pointe-au-Chien's partner tribes and organizations.

After Hurricane Ida, hundreds of thousands of donated items were sent to the Pointe-au-Chien tribal building for organization and distribution, and as of February 2022, donations are still being sent (PACIT, 2022). Organizations as large and internationally renowned as the Red Cross, Save the Children, and the Salvation Army sent donations. These were typically backpacks or drawstring bags filled with toiletries, children's activities, and emergency blankets. Food, clothing, and other donated items were delivered from local charities, faith groups, mutual aid organizations, and special interest groups such as Girl Scouts, University groups, cycling clubs, and the Cajun Navy Ground Force.

I observed conversations about climate change and climate-forced migration taking place in community spaces revolving around culture and mutual aid, specifically in the tribal building and on the land surrounding the tribal building where donations were stored. Tribal contributors made connections between climate change and the worsening storms and floods, discussing whether they and their families are prepared for the next one. The fear and anxiety around the

uncertainty of climate violence was a common theme throughout all interviews and in many interactions with tribal members during participatory observation. I was surprised, however, by the manner in which tribal members exchanged stories about the horrors of the storm. Instead of the hushed anxiety I was used to witnessing within northern communities facing environmental violence, Pointe-au-Chien tribal members used humor, gossip, and engaged storytelling in conversations about the storm and its fallout. This makes sense given the longstanding tradition of oral histories as a form of knowledge sharing in Indigenous communities. Supporting non-colonial knowledge sharing is a form of structural decolonization, where colonial notions, biases, and acceptable forms of knowing are rejected.

Harmful colonial structures such as the U.S. government, continue to dictate the ability of Indigenous communities to survive and thrive. Pointe-au-Chien Indian tribe is not vulnerable because of their location as much as they are vulnerable because of long-term class and race abandonment on behalf of the United States government. Republican and Democratic administrations alike dismantled social welfare programs, supported the destructive petrochemical and energy corporations that supported their candidate's campaigns, and allowed for incompetence in FEMA's preparation and response for disasters (Smith, 2006). These failures extend to the tribe's lack of federal recognition.

As of February 2022, the Pointe-au-Chien Indian Tribe is still seeking Federal Recognition. Being able to have direct interaction with FEMA instead of navigating local, state, and federal agencies just to receive disaster aid would be transformational for the tribe (Berlin, 2021). Multi-tribal coalitions also have advocated for increased resources for frontline tribes in the wake of Hurricane Ida. In October of 2021, the National Congress of American Indians Annual passed such a resolution that included a call for distribution of federal funding directly to

all affected tribes, and support of "tribally led decisions to adapt to the changing circumstances including adaptation, rebuilding, or resettlement (Berlin, 2021)." Achieving federal recognition would be game-changing for Pointe-au-Chien but given the recognition requirements being rooted in blood-quantum theory, it has been difficult for this diasporic community to be recognized (Harmon, 2021).

Solidarity groups and Indigenous-led and Indigenous-supported coalitions have played a vital role in sustaining the Pointe-au-Chien tribal community. I focused on four coalitions and organizations that work closely with the tribe in order to enhance my understanding of multi-tribal and multi-organizational initiatives supporting the tribe:

The Disaster Justice Network: this is a volunteer network lending support to share critical information that is not easily accessed for Hurricanes in the Gulf South. This is a large, multi-state network that works with tribes and other marginalized communities from Texas to Mississippi, and compiles funding, water, health, and housing resources for impacted communities. I was a member of this network and witnessed knowledge sharing between community leaders, academics, and disaster recovery professionals, coalition building, and cross-movement solidarity (Disaster Justice Network, 2022).

The Lowlander Center: This organization sponsors the Disaster Justice Network and is the organization that originally connected me to Pointe-au-Chien. The Lowlander center works directly with PACIT along with neighboring tribes to restore coastal marshes, protect sacred sites, increase tribal resilience, and reduce flood risk. The president of the Lowlander center is Pointe-au-Chien tribal member Theresa Dardar (Lowlander Center, 2022).

The First People's Conservation Council of Louisiana (FPCC): With Theresea Dardar also on their board, the FPCC is a coalition of coastal Louisiana tribes working to identify and solve natural resource issues on their Tribal lands. The FPCC also hosts and sponsors cultural gatherings where member tribes meet to share tradition, foster relationships, teach, and gather in resistance to Indigenous genocide and erasure (FPCC, 2022).

The Louisiana Coastal Tribes Coalition was formed after Hurricane Ida as a way to gather donations and support for the tribes most affected. The coalition establishes tribal points of contact for potential volunteers and maps out drop-off sites for donations to specific tribes. The Pointe-au-Chien main drop-off site has been the tribal building, where I volunteered to sort food, clothing, and supply donations (LACTC, 2021).

These organizations have engaged academics, organizers, journalists, students, environmental professionals, and others in collaborating with Pointe-au-Chien on climate justice initiatives as well as cultural preservation initiatives. The natural environment of Pointe-aux-Chenes is just as important to the tribe's heritage as its cultural and linguistic practices, and all three are inextricably related, as seen in the work done by the First People's Conservation Council. This practice is in line with the tradition of environmental justice movements. Traditionally led by women of color, and rooted in the intersection between culture, community, and the environment, environmental justice movements aim to empower and support environmentally marginalized communities.

An integral part of the tribe's work toward environmental justice is the Culture Camp, which works toward the preservation of tribal heritage. It is a two-week long summer camp for

children of the tribal community that supports the continuation of Pointe-au-Chien tribal practices for future generations. Sustaining the Indian French language is one of the biggest priorities of the tribe, and so the camp provides lessons taught by fluent speakers and elders. The camp also includes boat rides to historical sites such as burial grounds, traditional crafts, songs, oral histories from elders, and traditional Native dances. This is another example of the ways the Pointe-au-Chien tribe is practicing structural decolonization as a form of resistance and survival.

An on-the-ground environmental justice initiative and example of territorial decolonization is the Oyster shell reef program. According to interviews with tribal council members, the oyster shell reefs implemented to prevent and slow erosion in 2019, held up after Hurricane Ida. More reefs are expected to be implemented in the future, with help from the Coalition to Restore Coastal Louisiana's Oyster Shell Recycling Program. This act of resistance against climate violence is a form of territorial decolonization, as the tribe maintains their deep relationship with the lands and waters.

Buildings and structures relating to the fishing industry, such as seafood wholesalers are on track to be rebuilt with more durable materials as to be more resilient in future storms. This same principle has been applied to housing, and the Pointe-au-Chien tribe has met with architects and developers about the best kinds of construction for the bayou, with hopes that the homes rebuilt will be stronger and less vulnerable to high winds and flooding (Interviews, 2022). Tribal council members predict that rebuilding after storms would be a smoother process if the tribe was granted federal recognition, as federally recognized tribes have more access to FEMA resources (FEMA, 2021).

Tribal members have established that economic stability is vital to the survival of the tribe, especially because of the economic toll hurricanes take on the community. Given this information, it makes sense that any career path is supported by the community, even those in industries responsible or indirectly responsible for violence against the tribe. This acts as a reminder that in late-stage capitalism there is no entirely ethical consumption or career path. Fishing continues to be an important part of Pointe-au-Chien's tribal identity and therefore many adaptation and mitigation strategies relating to fishing have been implemented by the tribe. The determination of the Pointe-au-Chien tribe to stay on their ancestral land despite significant barriers is evident in the decolonial environmental justice movement building practiced by the tribe. This includes advocacy for more just environmental and climate policy, coalition building with Indigenous and environmentally aligned organizations, rebuilding initiatives, and preserving tribal culture and language through oral histories, education, and community building. These actions shine a light on the potential transformative climate and cultural future of the tribe.

CHAPTER SIX: Conclusion

Eager to understand the driving forces of climate displacement in Pointe-au-Chien and the emergence of resilience and survival practices in the face of climate violence, I approached this ethnographic research with a commitment to relationship building extending beyond the timeline of this project. Participatory observation, interviews, and tours illuminated the direct and indirect connections between hurricanes, erosion, tourism, coastal gentrification, and the oil and gas industry. These connections provided insight into the complex web of forces that influence Pointe-au-Chien tribal members' ability to stay on their ancestral land. Collaborators' observations on their own experiences with these forces revealed that while there is no one isolated driving force of climate relocation, the widespread destruction caused by hurricanes is the most visible force of displacement. Observation and interviews illuminated the ways in which forced migration caused by hurricanes results in social, emotional, financial, and environmental trauma.

Other forces putting pressure on residents include the recent emergence of tourism and coastal gentrification in Pointe-au-Chien. The presence of gentrified and tourist-occupied homes in Pointe-aux-Chenes provides a constant reminder that the legacy of colonization lives on in the continuing inequity and violence faced by Indigenous peoples. Resistance against this pressure is a form of territorial decolonization, as Indigenous folks advocate for their rights to this land.

Conversations with Pointe-au-Chien tribal members revealed that while the oil and gas industry creates immense environmental and economic damage to the bayou and the tribe, it also

employs Pointe-au-Chien tribal members. With that said, income diversification became a necessity for tribal members after the oil and gas industry destabilized the fishing industry.

Colonization brought the rise of industrialization and resource extraction, not only displacing and murdering Indigenous people, but also creating violent disruptions to the land. Industrialization and resource extraction resulted in climate change, desecrating the land and violently displacing Indigenous peoples. The oil and gas industry damaged the fishing industry, an important cultural and economic resource for the Pointe-au-Chien tribe and proceeded to profit off of the labor of tribal members given little choice but to join the oil and gas industry. This cyclical nature of this conflict confirms that the damage caused by colonization and consequent resource extraction is omnipresent in every aspect of tribal members' lives.

This project emphasizes how the challenges of a small coastal Louisiana Indigenous tribe reflect a global crisis. More and more communities are being faced with the harsh reality of climate violence every day, and the communities that have experienced the most harm from colonialism are also the most vulnerable to climate change (Douglass, 2020). In order to address this phenomenon, environmental justice theory tells us to center and uplift those impacted by environmental injustice in conversations and actions regarding resilience, migration, and survival.

A decolonial critique of climate violence in Pointe-au-Chien acknowledges that climate-forced migration is an environmental, social, climate, racial, and economic justice issue. To support the transformative environmental futures of Pointe-au-Chien and all communities facing climate displacement, we need to dismantle the systems of white supremacy, capitalism, and colonialism that are the foundation the United States is built upon. As observed in Pointe-au-Chien's efforts toward a resilient and livable future for their tribe, seemingly small steps such as

erosion mitigation, language preservation, and mutual aid, are acts of resistance and joy in the face of colonial and climate violence. Decolonization, like environmental justice, is a practice, not a one-time solution. Colonial thought, institutions, and occupation has not only created climate violence, it has also hindered the ability of communities to prevent, resist, and organize in the face of this violence. Territorial decolonization initiatives such as Landback, land-easements, or territorial autonomy would allow Pointe-au-Chien to continue ancestral fishing and land management practices, while also allowing for the tribe to make its own decisions regarding mitigation and adaptation initiatives. Steps toward federal recognition and territorial decolonization under a colonial regime are important to take. With this said, these steps toward territorial decolonization still rely on the same colonial institution that caused these issues in the first place. For instance, while federal recognition would grant the tribe much needed governmental protections, it is not a step toward decolonization as it only allows for self-determination and autonomy under the watchful eye of the same system that took away that self-determination and autonomy.

In reckoning with the ways colonization has painfully torn the tribe from its history, culture, and continued longevity, Pointe-au-Chien is working toward structural decolonization as well as territorial. These efforts are taking place in the form of multitribal coalition building, cultural and linguistic preservation, and mutual aid initiatives. As with territorial decolonization, it is difficult to work toward true structural decolonization within the constraints of a society built on colonial ideals and institutions. However, the mere existence of the tribe, in a nation where their survival and right to their cultural heritage has become political, is an act of decolonial resistance. The reality of having a politicized existence has made the overt decolonial initiatives led by the tribe that much more radical.

Recommendations for Further Research

When thinking about climate migration, it is important to make deep connections between climate change and colonization, and prioritize and honor Indigenous knowledge, ways of learning, and lived experiences in discussion of climate violence. Further investigation of this relationship, especially within the context of climate forced migration is needed. Regionally specific investigation is important because history and relationships to land and community differ in different locations. Coastal Louisiana is incredibly unique in its geography, ecology, history, culture, and the lived experiences of its inhabitants, and therefore requires dedication to an extended research process in order to conduct research informed by this context.

Since my research was limited to a single tribal community in coastal Louisiana during the span of a year, the inclusion of other tribal collaborators in a longer-term partnership would also be an important endeavor of future research. While my relationship to the community will continue in the form of volunteer work, friendships, and advocacy, this research project will not continue in the form of a senior Independent Study beyond spring 2022. Therefore, longer-term scholarship and research would be beneficial, with the caveat that relationship-building centering Indigenous ways of knowing should be prioritized above extractive research methods.

The ability to communicate in Indian French would have allowed me to better build relationships with tribal members as well as to understand more of the linguistic and cultural context of the community. Researchers who are able to speak this language dialect would benefit from a deeper connection with elders in the tribe, which would allow for a more comprehensive and nuanced understanding of the community. Filling in these gaps in research and in the capacity of the researchers may allow for more significant findings regarding forces of and reactions to climate migration.

Academic collaboration has the potential to contribute to multi-movement coalition building that supports the self-determination and survival of coastal Louisiana Indigenous communities. In order for that to happen, academics themselves must work toward structural and territorial decolonization within the institutions in which they work.

Solidarity and Action

The more collaboration and movement building that takes place in relationship with the Pointe-au-Chien community, the more potential for tangible action in solidarity with the tribe. With the acknowledgment that my research with the tribe has only lasted a year, I have observed the following ways folks can support the community. First, Hurricane Ida relief efforts are still crucially needed, especially in the form of monetary and building materials donations. These can be sent directly to the tribal building or through the tribe's GoFundMe.

Movements against petrochemical buildout and consequent violence are increasingly relevant to the tribe's battle against climate migration. Supporting[10] Indigenous-led water, land, and air protectors is an integral part of any movement toward environmental justice. Supporting the tribe in their fight to preserve cultural and linguistic traditions is also important. The tribe's culture camp is always looking for volunteer counselors and donations, and the tribe is open to Franglophones to conduct oral histories of elders.

Being mindful of the negative implications of tourism and coastal gentrification is especially important for settlers that have the resources to buy or rent coastal homes in tribal areas. While Pointe-au-Chien is not calling for a cease of tourism as Indigenous Hawaiians have done during the pandemic, it may still be wise to hold off on sportsman tourism in Pointe-au-

[10] See Appendix for specific links and resources on supporting Pointe-au-Chien

Chien and surrounding communities, especially while the tribe is still struggling to rebuild. Instead, consider donating directly to the tribe, or staying at tribally owned rentals or B&Bs.

Finding Meaning in Loss and Transformation

Standing on the Pointe-aux-Chenes Marina pier feels like standing out on the edge of the earth, observing the remnants of once flourishing and ever-changing lands.

Figure 26: Pointe-aux-Chenes Marina Dock

Where homes, gardens, and sugarcane plantations once stood, there are now skeleton trees, barrier islands, and clumps of marsh held together by thinning fibers. There are also dolphins. Tribal members tell me that until recently, no one had ever seen dolphins so close to the bayou, so close to fresh water. But with a transforming climate comes transforming

ecosystems, and unlike many of the organisms native to this bayou, dolphins don't mind the increasingly salty brackish water. They serve as a reminder that there has always been change, perseverance, resilience, and adaptation in the bayou. Pointe-au-Chien tribal members echo this sentiment. Even if there is migration in the tribe's future, they will always have roots here, have ecological community here, and have the memories and prolonged impact of their time here.

The Pointe-au-Chien Indigenous community, reckoning with the many manifestations of colonial, climate violence, is adapting and surviving. Losing hope is not an option for the Pointe-au-Chien tribe, nor is ignoring the climate and colonial crisis. Instead, they choose hope, community, and survival.

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Figure 27: Chickens and other domesticated birds roaming the street in Pointe-au-Chien

Appendix A: Interview Questions

Were you born or raised in Pointe-au-Chien?

What pulls you toward/keeps you living in Pointe-au-Chien?

How have you dealt with disasters (such as…) that forced folks to relocate?

How has land loss impacted you and your family?

What worries you the most about potential displacement?

How do you feel like tourism has influences the landscape of Pointe-au-Chien?

How do you think shrimping and fishing in PAC will change over the next 10 years?

How has the possibility of climate-forced displacement for you and your family changed the way you (think/plan for the future/relate to the land)?

How has oil and gas exploration impacted you and your family?

When considering forced relocation in the tribe's history, what do you think of?

Where do you see connections between climate change and colonization in regard to the tribe?

What do you hope the bayou and the tribe will look like in ten years?

How do you think the bayou and the tribe could transform in the future?

Appendix B: Study Materials

Pointe-au-Chien Indian Tribe

PROJECT COLLABORATOR CONFIDENTIALITY AGREEMENT

This Confidentiality Agreement (the "Agreement") is entered into by and between the Pointe-au-Chien Indian Tribe ("Tribe") with its principal office located at P.O. Box 416, Montegut, LA 70377, and

[Name]: **Lia Kahan**

[Address]: **716 Beall Ave #1978, Wooster, OH 44691**

("Collaborator") for the purpose of preventing the unauthorized disclosure of Confidential Information as defined below. The parties agree to enter into a confidential relationship with respect to the disclosure of certain protected and confidential information ("Confidential Information"). The purpose of this Agreement is to protect the Pointe-au-Chien Tribe's rights to maintain, control, protect and develop all cultural heritage, traditional knowledge, traditional cultural expressions, and tangible or intangible cultural and real properties.

1. Tribe. Tribe means the Pointe-au-Chien Indian Tribe and the use of the term "Tribe" within this Agreement includes: (1) the Pointe-au-Chien Tribal Council, (2) any Pointe-au-Chien Indian Tribal government entity, (3) individual Pointe-au-Chien Tribal members whether living, deceased, or unborn, (4) any persons representing the Pointe-au-Chien Indian Tribe, whether authorized or unauthorized, and (5) the land of the Pointe-au-Chien Tribal Community as a distinct entity, recognizing its own rights to protection and confidence.

2. Confidential Information. Confidential Information means all confidential and protected information and knowledge, written or unwritten, which is disclosed by the Tribe to the Collaborator by oral means or in writing. Confidential Information of the Pointe-au-Chien Indian Tribe includes beliefs, knowledge, movable, and immovable cultural properties, customary laws, traditions, human and genetic resources, seeds, medicines, objects, and knowledge of the properties of fauna, flora, and waterways, arts and artistic works, and any other forms of cultural expression.

3. Exclusions from Confidential Information. The Collaborator's obligations under this Agreement shall not apply to information which: (a) is publicly known at the time of disclosure; (b) becomes publicly available after disclosure by the Tribe to the Collaborator through no act of either party; (c) learned by the Collaborator through legal means other than from collaborating with the Tribe, Tribal representatives, or individual Tribal members; (d) is disclosed with the prior written consent of the Tribe; or (f) is required to be disclosed pursuant to any judicial or administrative proceeding, provided that the Collaborator promptly notifies the Tribe of such action and gives the Tribe the opportunity to seek any legal remedies to maintain such information in confidence.

4. Obligations of the Collaborator. The Collaborator shall hold and maintain the Confidential Information in strict confidence for the sole and exclusive benefit of the Tribe. The Collaborator agrees not to disclose the Confidential Information to any third

person, including any funding institutions, and only disclose the Confidential Information to its licensed or permitted co-Collaborators, employees, or those of its affiliates who need to know and who agree to keep such information confidential. The Collaborator shall not, without prior written approval of the Tribe, use any Confidential Information for the Collaborator's own benefit, publish, produce, transcribe, copy, orally disseminate, or otherwise disclose to third-parties, or permit the use of Confidential Information by third-parties for their benefit or to the detriment of the Tribe. The Collaborator shall return to the Tribe any and all records, notes, recordings, electrically stored media, Tribal objects, samples taken for scientific purposes, and other written, printed, or tangible materials in its possession pertaining to Confidential Information immediately if the Tribe requests so in writing.

5. Time Periods. The non-disclosure provisions of this Agreement shall survive the termination of this Agreement and the Collaborator's duty to hold Confidential Information in confidence shall remain in effect until the Tribe sends the Collaborator written notice releasing the Collaborator from this Agreement.

6. Relationships. Nothing contained in this Agreement shall be deemed to constitute either party a partner, member, licensed or permitted collaborator, or employee of the other party for any purpose.

7. Severability. If a court finds any provision of this Agreement invalid or unenforceable, the remainder of this Agreement shall be interpreted as to best effect the intent of the Tribe.

8. Integration. This Agreement expresses the complete and exclusive statement regarding the subject matter of this Agreement and supersedes all prior agreements, understandings, and communications, oral and written, between the parties regarding the subject matter of this Agreement.

9. Waiver. A waiver of any breach or failure to enforce any terms and conditions of this Agreement at any time shall not in any way affect, limit, or waive a party's right thereafter to enforce and compel compliance with this Agreement. The Tribe reserves its right to seek legal remedies against any known or unknown prospective, permitted, or licensed Collaborator for any prior breach of the terms of this Agreement.

10. Amendment. No modification of this Agreement is effective unless in writing and signed by both parties.

This Agreement and the Collaborator's obligations shall be binding upon and inure to the benefit of the Tribe and its members' respective successors, assigns and representatives.

Consent to Participate in a Research Study
The College of Wooster

Coastal Louisiana Indigenous Communities and Climate-forced Migration

Principal Investigator: Lia Kahan, Environmental Studies Department

Purpose
You are being asked to participate in a research study. I am exploring the relationship between the Indigenous communities, tribes, and nations, of coastal Louisiana and the loss and transformation of their lands and waters

Procedures
If you decide to volunteer, you will be invited to share local ecological knowledge, your experiences with climate resilience initiatives in your community, and your relationship to the lands and waters. Each informal interview/oral history will take approximately 15-60 minutes depending on how much you would like to share.

Risks
There are no known risks to participating in this project.

Benefits
There are no direct benefits to you for your participation. Indirect benefits may include a visual exploration of Indigenous-centered ecological knowledge and community needs relating to environmental justice in coastal Louisiana.

Compensation
Unfortunately, compensation is not available for participants in this study.

Confidentiality
The identity of participants will be protected during all phases of the study through storage in a password protected computer. All names will be changed to pseudonyms in the reporting of results. Any information you give will be held confidential. Audio recordings will be stored securely on a password-protected computer and destroyed after they have been transcribed.

Costs
There is no cost to you beyond the time and effort required to complete the procedure described above.

Right to Refuse or Withdraw
You may refuse to participate in the study. If you decide to participate, you may change your mind about being in the study and withdraw at any point during the experiment.

Questions
If you have any questions, please ask me. If you have additional questions later, you can contact me by email at lkahan22@wooster.edu You may also contact my advisor, Iemanja Brown, at ibrown@wooster.edu

Consent

Your signature below will indicate that you have decided to volunteer as a research subject, that you have read and understand the information provided above, and that you are at least 18 years of age.
Signature of participant _____ Date _____

You will be provided a copy of this form.

Appendix C: Contact Email

Dear (potential participant),

Hello, My name is Lia, and I am a student and young person rooted in environmental justice, mutual aid, Landback, and abolition/community care. I am currently working on my undergraduate capstone project with the College of Wooster. For this project, I aim to center coastal Louisiana First People's communities, knowledge, and needs in an exploration of climate resilience and the importance of place.

My vision for this project is to create an atlas of the lands and waters in coastal Louisiana informed by the experiences and ecological knowledge of First People's communities. Guided by the needs of the member tribes, I am having conversations with tribal members that are interested in sharing their insights and experiences on subjects such as heritage and burial site protection, land erosion, oil and gas exploration, and restoration. Guiding conversation/interview questions may look like, "How do you think your relationship with the Bayou Laforche lands and waters differs from that of your parents or grandparents", What plant species are you most connected to and what role do they play in your community?" (Person or organization) recommended you as someone that may be interested in this project.

If you wish to connect with questions and/or to have a conversation, please email me back at lkahan22@wooster.edu or reach me at 7348344064.I have attached more information and a consent form.

All my best,

Lia

Appendix D: Resources to Support Pointe-au-Chien and neighboring Indigenous Communities

Louisiana Costal Tribes Coalition Hurricane Ida Relief Effort: https://sites.google.com/view/hurricane-ida-lacostaltribes/home?fbclid=IwAR3N8A7SmThdMQ1yg13M2uMBVU3NzicDaj4lDGyiC5cr3RjYqY65ejLC4xM

Pointe-au-Chien Indian Tribe: https://www.pactribe.com/

First People's Conservation Council of Coastal Louisiana: https://fpcclouisiana.org/

Lowlander Center: https://www.lowlandercenter.org/

Rising Voices Center for Indigenous and Earth Sciences: https://risingvoices.ucar.edu/

GoFundMe for PACIT Hurricane Ida Recovery: https://gofund.me/2cb1571a

Restore the Mississippi River Delta: https://mississippiriverdelta.org/ida/

Lousiana Mutual Aid Response Network: http://www.imaginewaterworks.org/mutual-aid-response-network/#1586280839023-fc1294f6-a4f0

The Bvlbancha Collective for Indigenous Mutual Aid: https://www.bvlbanchacollective.com/

Indigenous Climate Action: https://www.indigenousclimateaction.com/take-action