**The Evergreen State College**

**Graduate Program on the Environment**

### Thesis Prospectus

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**STUDENT AGREEMENT:**

**SIGNATURE: \_Rachael Harrell\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_12/10/2021\_\_\_\_\_**

**FACULTY READER APPROVAL:**

**SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**MES DIRECTOR APPROVAL:**

**SIGNATURE:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

1. Provide the working title of your thesis[[1]](#endnote-1).

Sense of Place and Cohesion in Coastal Louisiana: A Case Study on Adaptive Capacity and Inherent Resilience

1. In 250 words or less, summarize the key background information needed to understand your research problem and question.

Louisiana’s landscape offers a preview of what to expect in other locations facing similar impacts related to rising sea levels and our changing climate, as Louisiana is expected experience the first and the worst of coming climate change events. The coastal Louisiana communities see the worst impacts and thus can offer a unique perspective on the broader issue of environmental migration and the distribution of risk among vulnerable populations facing the impacts of climate change (Colten et al., 2018). Louisiana represents the enigma of a modern state shaped by a history of fossil fuel-supported development and structural racism that is now dealing with the climate-driven and social impacts of those choices (Devyani, 2021). Over time these choices have disturbed many facets of life on the bayou, significantly through social and environmental injustices. A life that now faces climate as a threat multiplier expected to increase danger and frequency of extreme weather, storms, heat, and flooding. This research aims to understand the drivers behind resilience constructs and adaptive abilities seen in communities of south Louisiana.

Even though there is ongoing migration away from the most vulnerable coastal Louisiana areas; 47% of Louisiana’s population still lives in the coastal zone and when extended to include watersheds, home to the bulk of the state’s economy, more than 70% of Louisiana’s population are coastal dwellers (Birch & Carney, 2020). The future existence of many Louisiana coastal communities directly depends on limiting rates of sea level rise to the greatest extent possible (Devyani, 2021).

1. State your research question(s).

What is the relationship between sense of, and attachment to, place, community connectedness, inherent resilience, and adaptive capacity? How does this relationship effect decision-making related to climate action, specifically in coastal Louisiana?

Does sense of and attachment to one’s place combined with community connectedness and cohesion exacerbate the need for resilient practices? Is adaptive capacity sustainable when it is upheld by community cohesion and strong individual sense of place attachment?

1. Situate your research problem within the relevant literature. What is the theoretical and/or practical framework of your research problem?

ClimateCheck has Risk Rating score of 1-100 that measures historical risk and increased exposure to risk due to climate change, as compared to other locations in the United States. A rating of 100 is the highest risk highest in the country, risk rating of 1 is the lowest of anywhere in the country. According to ClimateCheck (2021), Louisiana’s risk rating for heat is 78, risk rating of 61 for storms, and when compared to other states Louisiana is ranked 2nd after Florida for maximum heat risks. In lower emission scenarios, Louisiana temperatures would continue to be on the low end of model-simulated ranges, but under a high emissions scenario, the warming rate is projected to increase. Compared to 1901-1960 averages, there is potential for average temperatures rise more than 10 degrees Fahrenheit by 2100 (The Climate Reality Project, 2021; Louisiana State Summaries, 2019). Louisiana will experience about 52 extremely hot days in 2050, while A typical person in the U.S. will experience about 43 extremely hot days in 2050 says Climate Check (2021). Louisiana will become warmer, both floods and droughts may become more severe, and any overall global warming will lead to increasing heat wave intensity but decreasing cold wave intensity (EPA, 2016).

Heat and storms are not the only risks Louisiana confronts. Louisiana also faces natural and anthropogenic subsidence, rising sea levels accompanied by coastal erosion, increases in precipitation, more frequent and intense flooding, and more intense tropical storms. Rising sea level is likely to accelerate coastal erosion currently caused currently by naturally occurring subsidence as well as sinking related to human activities, which has already caused the loss of almost 2,000 square miles of land since the 1930s (EPA, 2016). Soils have become drier, annual rainfall has increased, rain arrives in heavier downpours, and at only three feet above sea level, Louisiana classifies as being at extreme risk for impacts related to sea level rise (Louisiana State Summaries, 2019).

Parts of coastal Louisiana are sinking. The Mississippi River has traditionally washed sediment from Minnesota southward to create the river delta that encompasses most of coastal Louisiana. Historically, the occasional overflow of the river would deposit enough new sediment on the banks to allow the land surface to keep pace with the delta’s tendency to sink. Even so, these sediments gradually compact, leading to incremental sinking at a rate of about one inch every three years (EPA, 2016). This natural land building process has been impacted over time by human activities such as constructed river levees, navigation channels, and oil and gas dredging. Less sediment reaches the coast. Coastal lands are being submerged as sea levels rise and, in recent decades, have been losing about 25 square miles of land per year (EPA, 2016).

Due to subsidence, sea level rise at some locations is more than four times the global rate; this increases the risk of high tides inundating land and increasing the storm surge depths (Louisiana—State Summaries, 2019). The variability of sea level rise is high on the coast due to its geography. Whirling tropical storms tend to crash into areas that protrude into the Gulf of Mexico. The geography of the coast in the southeast causes a funneling effect of water, leading to higher observed storm surges (Louisiana—State Summaries, 2019).

Louisiana experiences many forms of flooding, including coastal or surge/tidal floods, fluvial flooding or river floods, pluvial floods related to rainfall-induced flash floods and urban flooding, and Backwater flooding. In May 2011, the lower Mississippi Valley experienced one of the worst floods in Louisiana history. The Morganza Spillway, only used once before in 1973, was opened to control the massive flooding, protect levees, and prevent flooding downstream in Baton Rouge and New Orleans (Louisiana—State Summaries, 2019). Opening the spillway inundated farmland and camps with silty river water and created a low-oxygen zone in the Gulf due to the volumes of fertilizer deposited there.

Because of the flat landscape and interconnected waterways, the impact of a rainfall event in one part of the state is often felt far beyond the site of the original downpour. Emergency flood disasters have been declared in every parish at least twice over the last 20 years, and climate change has made these events 40% more likely and 10% more intense (Devyani, July 2021). In 2016, the state experienced massive flooding in the Baton Rouge area after days of excessive rainfall. The Great Flood of Baton Rouge was the most damaging flood in recent history triggered by up to 30 inches of rainfall over several days and caused an estimated $10 billion in damages (Louisiana—State Summaries, 2019). Flood waters damaged or destroyed 50,000 homes, 100,000 vehicles, 20,000 businesses and led to the rescue of 30,000 individuals from floodwaters (Louisiana—State Summaries, 2019).

New Orleans was hit hard by category five Hurricane Katrina, leaving more than 80% of the city flooded, areas under as much as 15 feet of water, more than 1,500 fatalities in the state, and over $125 billion in property damages (NOAA, 2019). A month later, the Category 3 Hurricane Rita struck southwest Louisiana. Producing 5 to 9 inches of rain and causing a 15-foot storm surge along the southwestern coast (NOAA, 2019). NOAA Hurricane Research Division reports from 2005 to 2009, Louisiana was struck by six hurricanes, the largest number to hit the state since the beginning of the 20th century.

In response to Hurricanes Katrina and Rita in 2005, the state developed Louisiana’s Coastal Master Plan, which employs science to support a mix of large-scale coastal restoration and protection projects that aim to address land loss and provide risk reduction to coastal communities (Louisiana Climate Task Force, 2021). Integrated plans and efforts underway focus on rehabilitating, if not restoring, the coastal landscape while enhancing the protection of its inhabitants to weather disasters. Since developing its first Coastal Master Plan in 2007, the state has used 157 million cubic yards of sediment to create and nourish nearly 50,000 acres of land across its coast, including more than 60 miles of barrier islands (Devyani, 2021).

The 2020 hurricane season alone hit the Louisiana coast with five named storms, including three major hurricanes. Hurricane Laura in 2020 made landfall as a category 4 meaning winds sustained at 130-156 mph, caused an eighteen-foot storm surge and caused $17.5 billion in damages (Ramirez, 2021). Two months later, many still recovering from Laura, Louisiana is hit by category 3 Hurricane Zeta. On top of the disaster damage Louisiana saw in 2020, the world was struggling through the COVID-19 pandemic. This impacted emergency response teams when it came to disaster relief, leaving communities to rely on each other as they always have.

This year, 2021, the Louisiana Legislature unanimously approved the annual coastal plan funding for the next three years, setting the stage for average annual expenditures of just under $1 billion (Devyani, 2021). In response to May 2021 flooding events, Louisiana finally developed a comprehensive watershed plan, the Louisiana Watershed Initiative. This is the first inclusive watershed plan in the state, involving all seven watersheds with the main goal being to mitigate flood risk through coordinated efforts across agencies and regions. The Louisiana legislature plans to commit $1.2 billion in federal grants to projects that reduce flood risk across the state, including $100 million directed to home elevations and voluntary buyouts in more vulnerable parts of the state (Devyani, 2021). Review of recent climate action plans revealed there is no clear path for community inclusion in decision making. Plans focus more on continuing to reinforce infrastructure and economic stability. Under these conditions, maintenance and improvement of social resilience require a longer-term, multigenerational perspective that goes beyond preparing for isolated extreme events. Understanding the relationships between social systems within communities’ inherent resilience, adaptive capacity, and community cohesion is important to support climate change adaptation and resilience planning.

1. Explain the significance of this research problem. Why is this research important? What are the potential contributions of your work? How might your work advance scholarship?

Residents who are financially able are relocating away from coastal Louisiana, potentially breaking up social networks, institutions, and cultural traditions. Others are not because they cannot or simply don’t want to relocate. Those not able to or choose not to relocate will be left to weather the storms. Having plans catering to social cohesion is imperative. The question then becomes how to draw on the skills and talents of those no residing in those communities and those who will remain to put in place the types of networks, systems, and policies that will help them survive and thrive in the face of climate change.

No funds budgeted for coastal protection and restoration have been awarded for nonstructural projects since 2007, and unlike other proposed Master Plan projects, community-based components are voluntary, relying on local political will and policy change for implementation (Birch & Carney, 2020). There are many issues with this strategy, including a lack of planning and design capacity in underserved communities, disincentives for local communities to reduce rebuilding in flood risk areas and potentially displace residents from their community, and a lack of accurate information concerning environmental and social conditions (Birch & Carney, 2020).

There is a need to create valid community-based research for CBOs, NGOs, and FBOs on actual community needs involving resilience and adaptation to support the necessary inclusion of community needs, in the decision-making processes of state and local agencies, to achieve success in Louisiana climate action planning. Research (Aune et al., 2020 & Colten et al. 2018) into climate gentrification post hurricane suggests that minority populations are at a higher risk of experience disparities related to climate change disasters. To support informed decision making in climate vulnerable communities requires an understanding of the role social support networks, sense of place, and inherent resilience plays in decision making methods. Investigating and documenting the roles and connections between social relations and resilient practices in coastal Louisiana can provide awareness of the ways communities may be able to prevent the collapse. A study in this area will shed light on the functionality and importance of social and cultural systems and connectedness in communities along coastal Louisiana. This research will guide policy making and community-based organizations in supporting community involvement shift of resource management practices as well as fundamental restructuring of the historical practices of community engagement, land use, and urban design (Birch & Carney, 2020).

1. Summarize your study design[[2]](#endnote-2). If applicable, identify the key variables in your study. What is their relationship to each other? For example, which variables are you considering as independent (explanatory) and dependent (response)?

I will investigate connectedness and cohesion in Louisiana coastal communities as a network, and the networks relationship with individual or sense of place, inherent resilience, adaptive capacity, and decision-making process around climate change.

Through interviews I aim to get a better understanding through first-hand experience, truthful reporting, and quotations of actual conversations. With the purpose of understanding how the participants derive inherent resilience; what relationship this quality has with one’s sense of/attachment to place, and social networks; and how this relationship influences their adaptive capacity and decision-making behaviors related to climate disasters.

1. Describe the data that will be the foundation of your thesis. Will you use existing data, or gather new data (or both)? Describe the process of acquiring or collecting data[[3]](#endnote-3).

I hope to use existing data as well as gather new. Existing climate migration and climate vulnerability data for the most at-risk coastal parishes will be used to identify sub-parish communities. Public census records and demographics for these communities will be used. Public documents such as meeting transcripts, workshop summaries, public comments, and archival data.

For new data I intend to interview residents, community leaders and community organization leaders. I intend to interview 15 individuals to start with. My initial interviewees will be selected using local news and organization websites to identify community leaders, NGO leaders, faith-based organizations (FBOs), and environmental leaders. During the first round of interviews, I plan to use a snowball sampling technique to gather leads on other potential interviewees. A sequential interviewing process will be used to build question structure throughout interviews.

1. Summarize your methods of data analysis. If applicable, discuss specific techniques that you will use to understand the relationships between variables (e.g., interview coding, cost-benefit analysis, specific statistical analyses, spatial analysis) and the steps and tools (e.g., lab equipment, software) that you will take to complete your analyses.

I intend to transcribe interviews and use emergent coding to find themes involving sense of community, inherent resilience, social systems, sense of place, connectedness, and climate change. I will use existing community articles and public documents to support and back up themes identified from interviews. I hypothesize I will find themes to support the significance of social relations, physical closeness to social relations, and difficulties due to socioenvironmental changes sustain inherent resilience and sense of attachment to one’s place. I am interested in finding how these factors are associated with climate change.

1. Address the ethical issues[[4]](#endnote-4) raised by your thesis work. Include issues such as risks to anyone involved in the research, as well as specific people or groups that might benefit from or be harmed by your thesis work, perhaps depending on your results. List any specific reviews you must complete first (e.g., Human Subjects Review or Animal Use Protocol Form).

Native Americans, African Americans, Acadians, Isleños and Vietnamese are minority populations that have already experienced the downsides of climate gentrification due to devastating weather events that plague the coastal region. These communities stand to benefit from my research. My research intends to highlight the need for socio-climate considerations in climate action plans. Calling for pre-disaster action in the form of creating multi-actor networks that position these climate vulnerable communities to function as leaders. To be front-runners in research, planning, and creating climate disaster risk management strategies for their communities that support sustainable, diverse, inclusive, and equitable decision making. Since I will be completing interviews with humans, I will need to complete a Human Subject Review.

1. List specific research permits[[5]](#endnote-5) or permissions you need to obtain before you begin collecting data (e.g. landowner permissions, agency permits).

None that I know of now. I plan to do conduct interviews through zoom and via telephone. As of right now do not intend to be physically on lands collecting any data. This may change as I begin contacting potential interviewees.

1. Reflect on how your positionality as a researcher could affect your results and how you will account for this in the research process[[6]](#endnote-6).

My history with Louisiana began twenty-eight years ago. Even though I’ve been gone for five years now it is, and will always be, a part of me and my identity. I hope to respect the subjects’ perceptions in my portrayal of their disaster experiences. I to have been through my fair share of torrential down pours, tornadoes, and hurricane evacuations. During the 2016 floods I was living in Shreveport, Louisiana the town I grew up in. The floods devastated Baton Rouge and caused damage all over the state. I can relate and empathize with my interviewees on these shared experiences. I intend to remain neutral in my representation of vulnerable and marginalized populations that experience disproportionate climate change impacts. As a white woman with a college degree, I must acknowledge that I do not have the same experience of being marginalized by society in this way.

1. Provide at least a rough estimate of the costs associated with conducting your research.  Provide details about each budget item so that the breakdown of the final cost is clear.
2. Provide a detailed working outline of your thesis.

**THESIS INTRODUCTION**

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Big picture meaning & implications

-Regionally

-Globally

Directions for future research

**REFERENCES**

1. Provide a specific work plan and a timeline for each of the major tasks in the work plan. Be as realistic as you can, even though you will probably need to alter this schedule as you complete the tasks. Remember that faculty readers take time to return your drafts and that the final polishing and formatting of your thesis for binding will take longer than you ever imagined.

Text

Description automatically generated

1. Who, beyond your MES faculty reader, will support your thesis? Indicate support both within and outside of Evergreen. Be specific about who they are and in what capacity they will support your thesis. If you are working with an outside agency or expert, be specific about their expectations for your data analysis or publication of results.

I intend to get support mainly from my thesis reader as well as other evergreen faculty.

1. List the 3-5 most important references you have used to identify the specific questions and context of your topic, help with issues of research design and analysis, and/or provide a basis for interpretation. For each annotated reference, explain how your project specifically connects to the source by extending, challenging, or responding to the conclusions, methods, or implications. For any other sources cited in this document provide a complete bibliographic citation.

Aune, K. T., Gesch, D., & Smith, G. S. (2020). A spatial analysis of climate gentrification in Orleans Parish, Louisiana post-Hurricane Katrina. *Environmental Research*, *185*, 109384. <https://doi.org/10.1016/j.envres.2020.109384>

Aune et al. examine the climate gentrification following hurricane Katrina based on the associations between flooding severity, ground elevation, and gentrification and whether this was modified by neighborhood level pre- and post-storm sociodemographic factors. The study found high elevation, low-income, demographically transitional areas were particularly vulnerable to climate gentrification. Meaning areas that more closely resemble high-income area demographics, may be vulnerable to future climate gentrification. The findings of this research directly relate to the communities I plan to research

Colten, C. E., Simms, J. R. Z., Grismore, A. A., & Hemmerling, S. A. (2018). Social justice and mobility in coastal Louisiana, USA. *Regional Environmental Change*, *18*(2), 371–383. <https://doi.org/10.1007/s10113-017-1115-7>

Research in Colten et al. (2017) is based on the population that I intend study and cover many of the same concepts. The study concludes that given previous research on attachment to place found in coastal residents, the state coastal agency has inadequately incorporated community participation. Also, age groups are seen to play a main role in migration through the mobility of younger generations.

Laska, S. (Ed.). (2020). *Louisiana’s Response to Extreme Weather: A Coastal State’s Adaptation Challenges and Successes*. Springer International Publishing. <https://doi.org/10.1007/978-3-030-27205-0>

Laska (2020) is a book full of useful studies on communities in Louisiana. This resource offers content for every section of my thesis.

Simms, J. R. Z. (2017). “Why Would I Live Anyplace Else?”: Resilience, Sense of Place, and Possibilities of Migration in Coastal Louisiana. *Journal of Coastal Research*, *332*, 408–420. <https://doi.org/10.2112/JCOASTRES-D-15-00193.1>

Simms (2017) covers the concepts I plan to research as well as offers techniques for interviewing specific groups of people in this area.

**Cited Sources**

Birch, T., & Carney, J. (2020). Regional Resilience: Building Adaptive Capacity and Community Well-Being Across Louisiana’s Dynamic Coastal–Inland Continuum. In S. Laska (Ed.), Louisiana’s Response to Extreme Weather: A Coastal State’s Adaptation Challenges and Successes (pp. 313–340). Springer International Publishing. <https://doi.org/10.1007/978-3-030-27205-0_12>

ClimateCheck. (2021). *Louisiana Top Climate Change Risks: Heat, Storm, Coastal Flood / ClimateCheck*. <https://climatecheck.com/louisiana>

The Climate Reality Project. (2021, February 19). *WE®: How the Climate Crisis is Affecting Louisiana*. Climate Reality. Retrieved from <https://www.climaterealityproject.org/blog/how-climate-crisis-affecting-louisiana>

Devyani, K. (July 2021). *Climate change threatens Louisiana’s future, but the state is taking bold action to increase its resilience*. Environmental Defense Fund. Retrieved from <http://blogs.edf.org/climate411/2021/07/22/climate-change-threatens-louisianas-future-but-the-state-is-taking-bold-action-to-increase-its-resilience/>

Ramirez, R. C. (2021, August 28). *Louisiana has suffered from back-to-back climate disasters*. CNN. <https://edition.cnn.com/2021/08/28/us/hurricane-ida-louisiana-climate-change/index.html>

1. You are not locked into this title; its purpose is to help you identify the main point or topic of your thesis at an early stage. [↑](#endnote-ref-1)
2. You might discuss selection of case studies, sampling methods, experimental design, and/or specific hypotheses you will test. You should also address any specialized knowledge or skills that are necessary to complete the research. [↑](#endnote-ref-2)
3. If you are planning to use existing data, explain the specific source, contact information, arrangement with collaborating agencies, and expectations about use of data and final products of your research. If you are planning to gather new data, describe specific methods, time, place, and equipment that will be required. [↑](#endnote-ref-3)
4. If you’re not sure where to start, consult a ‘Code of Ethics’ or other similar document from an academic society in an applicable field of study. [↑](#endnote-ref-4)
5. If you are collecting ANY samples or data, even observational data, on public lands (city, county, state and/or federal) it is your responsibility to find out the permit requirements BEFORE you collect data. Conducting research with tribal members/on tribal lands will have different and additional requirements. [↑](#endnote-ref-5)
6. Your *positionality as a researcher* refers to the fact that one’s “…beliefs, values systems, and moral stances are as fundamentally present and inseparable from the research process as [one]’s physical, virtual, or metaphorical presence when facilitating, participating and/or leading the research project…” (The Weingarten Blog 2017). [↑](#endnote-ref-6)