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## Enhancing Gulf of Mexico Coastal Communities' Resiliency Through Participatory Community Engagement

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**ENHANCING GULF OF MEXICO COASTAL  
COMMUNITIES' RESILIENCY THROUGH  
PARTICIPATORY COMMUNITY ENGAGEMENT**

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2010



## Research Summary

- A strong sense of individual responsibility for one's self and toward the community is critical for resilience.
- Community engagement in all phases of the decision making process regarding recovery, reconstruction and restoration activities is as important as the physical outcomes of that planning.
- Trust is paramount: trust among residents and between residents and their leaders – this trust helps to facilitate a cooperative relationship in which resident's needs are met and their skills are recognized, honored and utilized.
- The effectiveness of a leader is only as powerful as their transparency of motives/ actions and the support of her/his constituents.
- Resilience is most often contextually determined, necessitating much care in the creation of generalized indicators.
- The people of the community, their local knowledge and experience are the principal resources for sustainable recovery.
- Collaborative reflection can improve the capacity of government agencies, academic institutions, and local communities in working together to find practical solutions to problems.
- Assessing the caring interactions of individuals, households and organizations offers a tool for discerning the level of resilience.
- Census data measurements of a community's vulnerability often miss community social systems of support and citizen engagement that has the ability to foster resilience in the face of high risks.
- A community-of-place that might have a poor infrastructure rating could possibly have a robust, effective and very resilient personal and community social network system.
- The attachment to place and the honoring of the 'commons' are key elements to resilience and important in increasing resilience.
- The personal experience of strong place attachment and local knowledge can not be replaced by scientific measurement or quantitative data when understanding the importance of attachment in a community's resilience.
- There is no rigid dichotomy between nature and culture.

# Introduction



*Centuries of sediment dispersion from the Mississippi Delta's geologic processes have created natural ridges along the banks of the Louisiana wetland bayous. Southeastern communities have historically built linear communities along the banks of these bayous, taking advantage of the naturally elevated land. Jean Lafitte is an example of such a community.*

*\*Red box shown on map indicates enlarged area.*

Gulf of Mexico (GOM) coastal communities are threatened by one of the highest and fastest growing rates of land loss that mimics sea level rise, one of the highest rates of tropical cyclones – anticipated to be higher for a multi-decadal period – and recently some of the most powerful hurricanes ever recorded, likely enhanced by ocean heating. (LSUAg, 2004) Exacerbating coastal land loss, salt water intrusion, and marsh degradation is the construction of, “canal and levee construction built to protect populations from flooding, and

to support the domestic oil and gas industry” (LSUAg, 2004). The area is also challenged by high rates of coastal economic vulnerability due to persistent poverty exacerbated by the weak and often outdated infrastructure of utilities for rural; the dramatic reductions in seafood prices, especially shrimp, due to international imports; and the most costly hurricanes ever to strike the U.S., Katrina and Rita, in 2005. Within this context of increasing risk, GOM coastal communities struggle to survive physically, culturally, socially and economically as their ecosystems are dramatically challenged.

The incorporated town of Jean Lafitte, and the surrounding unincorporated areas linked to it (Rosethorn, Barataria, Crown Point, Lafitte) were the prime area of focus for this research. The Barataria area is ethnically mixed and is home to extraction occupations (shrimping, fishing, oyster and crab harvesting and oil/gas employment), recreational fishing while undergoing coastal gentrification and suburban development. Though seen by many outsiders as a predominantly white population, the town is rich with a number of cultural heritage groups including Acadian, German, French, Cajun, Creole, Filipino, and Native American.

Using a Participatory Action Research (PAR) methodology, the project team at the University of New Orleans - CHART (Center for Hazards Assessment, Response and Technology) worked to identify and enhance community resilience in partnership with the residents of this cluster of Barataria Basin communities. The strategies that were used both documented and analyzed community member's knowledge of resilience, and indicators thereof, within the community following hurricanes Katrina and Rita (2005). The grant from NOAA was awarded in order to develop a community disaster resiliency index. However, as the research unfolded, it was decided to modify the goal to one of a "complex of indicators" rather than a quantified, combined measure of these indicators, i.e. index. Findings reported in this document and others related to this project reinforce that the approach was effective. Using the participatory approach the community was able to identify indicators of their resiliency and to evolve them more robustly during the duration of the project.

Hurricanes Gustav and Ike (2008) struck during the course of the research project. This storm season gave researchers an unexpected chance

to do a comparative study of the community's resiliency actions after Katrina/Rita with the ongoing responses for Gustav/Ike. Though the PAR methodology of reflexive entree is a time consuming approach, the team has opted to use it to foster a relationship that, through conversation, has the potential to reinforce the pre-existing resilient activities of the community and to aid community members in recognizing indicators of resilience that may be overlooked.

The contemporary perspective is that resilience and recovery are not just physical outcomes but are social processes that encompass decision making about restoration and reconstruction activities. In *Disasters by Design*, Mileti explains the downfalls of externally developed, top-down approaches to resilience. He says, "Local participation and initiative must be achieved. Some key deterrents to a speedy recovery have been identified through research – namely, outside donor programs that exclude local involvement, poorly coordinated and conflicting demands from federal and state agency-assisted programs, staff who are poorly prepared to deal with aid recipients, top-down, inflexible, standardized approaches, and aid that does not meet the needs of the needy" (Mileti, 1999:230). In contrast, this research approaches the concept of developing resilience from the inside out through a process of intense reflection by community members on qualities that foster resilient activities within the community.



Following the PAR principals, the team's primary aim and method of data collection were highly qualitative—relying on loosely structured questions, which effectively serve to state the purpose of our study and to highlight rough topics of interest for the impending conversation. Because the aim of the research was to understand the personal resilience stories of the community members, the team chose to use a semi-structured interview style in order to allow the data to emerge through subsequent informal conversations. From these conversations with community members the team has been able to note and detail several strong indicators of resilience within the social norms, traditional networks, (both formal and informal) and culturally rooted customs of the Barataria region communities.

Resilience has been conceptualized from a variety of perspectives by the experts of many fields / discourses. The vast literature pertaining to the term places its origin in psychology as early as the 1940s, in which researchers investigated the effects of traumatic stress events, especially in the minds and lives of children (Manyena, 2006). Since that time, the term has evolved to be used in ecological (Hollings,1973; Gunderson,2002), economic (Rose,2004), and social contexts (Adger,2000) making the term ripe for use within the field of disaster studies.

In more recent conceptualizations of the term, social capital is beginning to be represented and plans for creating or enhancing resilience are being laid out. However, these plans often suffer from an emphasis on top-down approaches to resilience, (United Nations, 2005) which attempt to place dissimilar communities into a common framework, an understandable, but not necessarily constructive approach.

It is crucial that the understanding of resilience changes from a 'one-size-fits-all' approach to recognizing that "the response of any system to shocks and disturbances depends on its particular context" (Walker and Salt,2006:1). In particular, resilience within social-ecological systems is strongly determined by the capacity of humans within that system to respond collectively and effectively to changes or disturbances within that particular system.

Many single-sentence definitions of resilience exist. However, this tendency to simplify should be discarded in order to give the complexities of resilience the consideration they require. Adger has argued that, "no single indicator captures the totality of resilience" (2000:357) . A crucial aspect of any definition of resilience must consider that resilience will have many types of indicators, and the relationships between these indicators will be complex. Additionally, an indicator of resilience in one community may, or may not, be an indicator of resilience in another. Indicators of resilience, in part, are determined by the ecological, social, economic and cultural contexts of a community. For that reason, this project does not attempt an excessively brief definition, but will instead attempt to support and add to the many critical aspects of resilience that have been covered, in part, by previous research.

Resilience should be holistic, in the sense that it incorporates what is often referred to as ecological, economic, and social resilience. There is no rigid dichotomy between nature and culture (Van der Leeuw and Leygonie, 2000) and resilience should refer to a complex system that includes all other natural systems, of which humans, society, and culture are a part. Resilience must also be flexible (Beatley, 2008). Thus, research using resilience thinking often uses a format called Complex Social Ecological Theory, in which both aspects are constantly changing and adapting. Static or rigid solutions



to socio-natural problems can decrease the resilience of systems by preserving antiquated solutions that were useful in the short-term, but ineffective in the long-run.

Resilience must refer to both disaster recovery after the event, as well as disaster mitigation before the event. Fortunately, more recent literature is beginning to reflect this dual need, though it was an underrepresented idea for some time (McEntire et al., 2002). A resilient community should have the ability to become more resilient through the experience of living through a disaster and understanding the need to be better prepared and mitigate for the next disaster event.

The effectiveness of top-down approaches, such as the Hyogo Framework (United Nations, 2005) is questionable. This plan of action calls for cooperation among state, regional, and international organizations, the scientific community, and civil society (volunteer and community-based organizations). However, the emphasis is on the power and agency of states and international organizations. The implementation of recommendations of the Hyogo are also less effective and generic. Most recommendations simply suggest that states and organizations “promote” cooperation and education, without an explanation of how to go about doing so. Also problematic is an emphasis on the quantification of disaster impacts on communities and states over more qualitative assessments, as well as condescending language, such as referring to the victims<sup>1</sup> of disaster as “psychologically damaged” (United Nations, 2005:11). These characteristics do not suggest empathetic or compassionate motivations behind the framework, which are factors that

could be useful in creating local community efficacy.

Furthermore, indicators of resilience in one community cannot necessarily be placed into a framework that can then be imposed on other communities. Resilience is most often contextually determined, necessitating much care in the creation of generalized indicators.

In contrast, resilience is nurtured by bottom-up approaches that start at a community level with the creation of social capital through robust social systems and networks. Social capital has been defined as “the trust, social norms, and networks which affect social and economic activities” (Nakagawa and Shaw, 2004:7). More precisely, it is the trust between community members and leaders, the networks between individuals, groups, and organizations, and social norms that coincide with disaster mitigation and recovery efforts. Enhancing existing social capital is a process that a community could begin on its own as pressing socio-natural issues begin to affect it. This can be done through a participatory action collaboration with a university or agency team that is strongly committed to the activity of reflection (Smith,1999).

*A resilient world would promote*

**Social Capital-** *that ensures trust, supports well-developed social networks, and adaptable leadership.*

Bourdieu defines social capital as, “the totality of all actual and potential resources associated with the possession of a lasting network of more or less institutionalized relations of knowing or respecting each other” (Bourdieu, 1992:63[294: Birner and Wittmer]). From

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<sup>1</sup> Craig Fugate, FEMA Director during a keynote presentation at the Natural Hazards workshop meeting, 2009, called for a change in the word victim to survivor for those coming through a disaster event to emphasize their personal capacity instead of vulnerability.

Bourdieu's sociological point of view the amount of social capital that an individual has can be parlayed into political capital thus increasing an individual's capacity to effect change.

As the concept of social capital suggests, communities already possess qualities that are resilient. Through community networks, both informal and formal, and/or collaborative processes, communities that do not recognize such skills, knowledge, and relationships as resilient will understand their skills, knowledge and relationships as patterns of resilience. This process can enhance existing patterns of resilience through the sharing of historical community narratives, knowledge, resources.



## Key points on Resilience Thinking

You don't need a degree in science to apply resilience thinking; you do need a capacity to look at social-ecological system as a whole and from different perspectives and at different scales.

When managing for resilience you need to consider two types of resilience: resilience to disturbances and risk that you are aware of, and resilience to disturbances and risks that you haven't even thought of.

A resilient world would promote and sustain diversity in all forms, biological, landscape, social and economic.

A resilient world would promote trust, well-developed social networks, and leadership adaptability. A resilient world would place an emphasis on learning, experimentation, locally developed rules, and embracing change.

Walker and Salt, 2006

# Findings

Robust indicators of disaster resilience were found in social and cultural lifestyles and traditions of the Barataria area community.

- Trust and the Engaged Citizen
- Strong Internal Leadership
- Sharing Knowledge and Resources
- Helping Neighbors
- Independent and Self-Reliant Recovery
- Diversity and Range of Skills and Knowledge
- Gender Equality
- Evacuation Planning
- Informal Social Networks
- Commons and Sense of Place

## Introduction to the Findings

One approach to defining a community's resilience is the capacity of the physical infrastructure and built environment to withstand a threat. However, a community's resilience can also be understood as the capacity of its social system to come together to work toward a community objective. Resilient community involvement includes a wide network of linkages with other people, including friends and family. This involvement has been shown to be critical in supporting and sustaining resilience (Buckle, 2006). In light of these two aspects of community resilience, Paton (2006) has put forth a model of "comprehensive adaptive capacity" which measures resilience as a function of both the:

- (1) a. individual (his or her self efficacy, sense of community, and sense of place) and  
b. community's resources that promote adaptation and the
- (2) mechanisms that facilitate community involvement.

A few such examples in Jean Lafitte include the Head Start program/location, the middle and

high school, and the Senior Center. All of these are located within the common area of the town. The proximity of these institutions to the town's common area is a mechanism by which community members are able to meet, talk, and foster stronger bonds through such daily interactions.

It is necessary to understand the capacity of individuals within communities because resilience is about nurturing and sustaining the capacity of people, communities, and societal institutions to adapt to and experience benefit from disaster" (Paton, 2006).

This emphasis on the capacity of individuals can be found in much of the current literature on disasters and disaster resilience (Walker and Salt, 2006; Paton, 2006; Beatley, 2008). Current findings of the Barataria area show that an individual's ability to be resilient is enhanced and ensured through a connection with the greater community. Because climate change will threaten coastal communities from multiple angles, coastal management strategies must

begin focusing on community adaptability rather than more conventional large-scale infrastructure such as armoring or hardening of flooding mitigation. Because it is likely that coastal communities will face environmental change and face it quickly, there is no time to focus solely on large scale projects whose goals aim to come to fruition in a matter of years, sometimes decades. Rather, resilience must begin with the support of local capacity, community adaptability, and social capital.

Walker and Salt (2006) emphasize the importance of social capital as it pertains to community resilience. They argue that the resilience of social-ecological systems is intimately tied to the capacity of the people within that system to respond together and effectively to changes within that system. They also make the argument that trust, strong social networks, and leadership are all critical factors that contribute to a community's overall resilience.

These three factors, trust, strong social networks, and leadership make up the crux of the PAR project's research findings. The research project began by asking: Why and how is the Jean Lafitte area resilient? Through multiple methods, including conversations and the process of reflecting with community members, several reoccurring themes were revealed. Briefly, these themes include the amount of lateral and vertical trust ties among and between community members and local politicians, the community's independent character, which is particularly noticeable in times of crisis and recovery, and the wide range of skills possessed by the residents. The dynamic and effective leadership of Mayor Kerner was also a major theme. Additionally, the resident's effective sharing of resources, and well established communication and evacuation networks further increased Jean Lafitte and the

surrounding communities' resilience after Hurricanes Katrina, Rita, Gustav, and Ike.

At the beginning of each section a brief theoretical reference has been provided. This is not meant to be an exhaustive literature review, but rather a supportive and pertinent theoretical substantiation.

### **Trust and the Engaged Citizen**

Social capital is often cited as a vital feature of a resilient community (Smith,1999; Hollings and Gunderson, 2002; Berkes and Folke, 1998; Nakagawa and Shaw, 2004). Campbell explains how social capital is not only necessary to well-functioning community, but is also a result of the level of trust citizens have in their local systems. He states, "A community with many social networks and most of the population participating in them is rich in social capital. And in such communities confidence is generally high. Social capital is not a property of social trust; it is a function of confidence in a particular system and is based on familiarity" (Campbell, 2006:211).

He goes on to argue that in order to create safer, more resilient communities, "(n)etworks of trust need to be created within society" because "through these networks new modes and systems of confidence can emerge" (Campbell, 2006:212). As confidence emerges so does political capital. Social capital becomes a vehicle for the accumulation of political capital thus the engaged citizen is one that has strong social networks and political power. Trust among community members and between residents and government agencies facilitates a cooperative relationship in which residents' needs are met and their skills utilized. High levels of confidence in government and in social systems of the Barataria area were shown to be an invaluable resource when confronting disaster situations.

It was not uncommon to hear community members of the Jean Lafitte area describe how after the storm passed many neighbors went into the homes of other neighbors in order to clean out refrigerators, drill holes in the floor boards, and patch broken windows. These stories showed that a tremendous amount of trust exists within the community. This is a mutual trust as not only evacuated neighbors felt comfortable with letting other neighbors into their homes, but on the other side, the community members that stayed or returned quickly felt no compunction about entering their neighbors' homes to begin clean up.

One community member explained that after Rita, she and her neighbor exchanged copies of their respective house keys so that in the event of another disaster they would not have to break into each other's homes to start cleaning. The initiation of making neighbors' resources available in times of disaster is intentional. When Gustav hit, this same individual took efforts to remove food from her neighbor's refrigerator after the power had been shut off in order to preserve the appliance.

Trust among and between community members and elected officials is another key factor that contributed to the speed with which the Jean Lafitte area was able to recover after these disasters. The speed of recovery is directly linked to residents fulfilling what they consider to be their civic obligation. Trust between community members and government not only facilitates a speedy recovery after disaster situations, but also promotes engaged citizens.

The engaged citizens of the Lafitte area were able to accomplish a number of activities that residents in other affected areas were not, due to the fact that in other regions citizens were discouraged from participating in the immediate response. Thirty miles to the northeast in some parts of New Orleans,

residents were kept away from the city for an extensive amount of time, whereas some residents of the Barataria area re-entered as soon as the storm passed. New Orleans' residents were not allowed to clear their own streets, re-establish utilities, or begin rebuilding without weeks and months of running through bureaucracy.

The story is different in Jean Lafitte and the surrounding area because here, residents and elected officials enjoy a mutual trust not often found in other towns and cities. James Schwab, senior researcher for the American Planning Association argues that, "Resiliency starts with trust between citizens and government. It is almost impossible to empower people to make their communities resilient without such trust. It is not just that citizens expect their local public officials to tell them the truth and propose honest solutions; trust is not a one-way street. It is also that those officials trust their constituents as well and thus feel empowered to share the truth about hard choices with regard to creating resilient institutions that can withstand future crises" (J. Schwab, personal communication, September 24, 2010). In the Barataria area this mutual trust allows officials to rely on residents to contribute labor and effort to the needs of the town such as clearing trees from the road and in turn, residents trust that officials will not prevent them from doing such necessary tasks. This trust is critical toward fostering engaged citizens.

One example found during conversation with the owner of a local charter boat business described how community members were temporarily deputized after Hurricanes Katrina and Rita. In the days following both storms, much of the land-based transportation routes were blockaded by local and state police via government mandate. Rather than turn his people away in their attempts to return home the mayor of Jean Lafitte deputized those

citizens so that they were able to legally cross the government road blocks and begin necessary post-hurricane clean up. Such swift action contributed to the preservation of the structural integrity of many homes, the clean up of public roads and the restoration of utilities.

Civic duty was also displayed in a story from the mayor. After Hurricane Rita, several community members who stayed during the storm began clearing roads within the community the very next day. Using chainsaws and personal vehicles, these few residents were able to clear hurricane debris from every roadway. The roads were cleared so well that the first Entergy crew to enter the area assumed that another crew had come before them. Assuming that the town required no further assistance, they turned to leave. The mayor, then chased down the Entergy truck in his own vehicle to tell them that power lines and other such infrastructure still needed repair and requested that they stay and work.

*“Our story is really simple, we didn’t wait for the government or FEMA. We all worked together right away to help each other.”*

Another aspect of the Barataria area’s concept of civic duty relates to the amount of disaster recovery money that residents were willing, or in this case unwilling to take. The Senior Center’s director explained that by returning to Jean Lafitte as soon as possible she was saving the taxpayer’s money. From her perspective of civic duty it was wrong to take tax money to pay for a hotel when she could have stayed in her house for free. In this view her sense of civic duty manifests in a way that recognizes the importance of taking as little government money as possible. This essentially reinforces the idea that active civic duty means taking personal responsibility for oneself and one’s community.

## Leadership

The effectiveness of a leader is only as powerful as the support of his/her constituents. Beatley argues that a new generation of coastal leaders will, “depend on supportive constituents and community groups who see for themselves the value of long-term resilience” (2008:164). In a disaster situation this becomes even more critical and is often absent. Disaster experts such as Peacock and Schwab (1998, 2000) suggest from their work the need for trustworthy and transparent leadership that works for and with their constituents. The kind of leadership in Jean Lafitte is an exemplar case study of governance that enhances resilience. Thus in this section we highlight the specific interactions that are indicative of how trust between community members and government officials is created and maintained.

The strong and effective leadership of Mayor Timothy Kerner is often cited by community members as a primary reason for Jean Lafitte’s quick recovery. Winning his most recent re-election with over 90% of the vote, Mayor Kerner is obviously well-liked and respected by the majority of the community. In the days surrounding Katrina and Rita, Kerner oversaw many aspects of the flood control and recovery efforts, from water pump management, sand bagging, to debris clean up. Before the 2005 storm season, he had been a strong supporter and staunch advocate for storm mitigation which included flood protection for lower Jefferson Parish. He has advocated in Washington D.C., for means to address flood control, mitigation and restoration projects. Since Katrina and Rita he has called upon his pre-established relationships with all levels within and between government entities to continue this advocacy. Community members were cognizant, appreciative and supportive of the mayor in his advocacy with other levels of government. Aware of the mayor’s political

savvy, community members made note of the fact that, “Timmy even went to the White House to help us put up better levees.”

*“Timmy tried his hardest to help everyone. I would never vote for anyone but him.”*

*Brycen, 25*

The importance of strong leadership was a theme heard in nearly every conversation. One Senior Center member said, “Timmy [Mayor Tim Kerner] was great. The town hall acted as a food and water station as well as center for communication.” When asked what was the biggest help she said, “The mayor.” This was reiterated by numerous other older citizens. One such memorable conversation ended with, “Timmy is number one!” It cannot be overstated how beloved Mayor Kerner is within the community and the surrounding areas. Even the younger generations within the community acknowledge the amount of work that the mayor does on behalf of the community.

Small business owners also noted the impact of the mayor’s efforts after Hurricane Rita. The mayor’s skill set was also diverse in that he was able to navigate between agencies, bureaucratic red-tape, and his constituents’ needs. Having been a fisher, the mayor’s skill set is also inclusive of and similar to those of his constituents, which helps him to appreciate the particular needs of the many small family-run businesses in the area.

In one conversation with a family of local restaurateurs several comments were made regarding the mayor’s efforts to help all areas of the town. After the business flooded from Rita they had to replace supplies, furnishings, and appliances. The family described how Mayor Kerner helped by personally sending a debris removal truck to pick up the entire contents of their home and business. The mayor also made

it possible for the elderly to have their debris removed from their home to the curb in order to meet FEMA debris removal regulations. This illustrates how effective leadership provides necessary resources in an appropriate and timely manner.

It is worth noting the considerable amount of regard the mayor holds in the town because disaster literature makes the call for a new kind of leadership that is forward-looking, holistic and one that works for the good of the people and the further democratization of the decision making process. Beatley says, “A new sort of political leader will be needed—climate change will require courageous steps and expeditious and often herculean actions and, in turn, elected officials who are able to rise to these circumstances and to exhibit a degree of leadership and personal humility that is often lacking” (2008:164).

The findings of this project reflect and agree with Beatley’s conclusions in his book, *Planning for Coastal Resilience*. Not only the measures the mayor takes before and after a disaster event, but his efforts to accomplish long-term goals including structural and non-structural mitigation show that he is fully aware of the risks that accompany coastal life and desires above all to create a safe and sustainable community by adapting to those threats.

### **Sharing Resources/Helping Neighbors**

The sharing of resources is often an indication of democracy at its best. (Horton and Freire, 1990) The section that follows give examples of the methods and dynamics of sharing resources, which was a key factor in the speed of recovery in the Barataria region. The sharing of resources, both knowledge and material, helped to enrich the lives of neighbors and the community during recovery. “The claim (of the Human Development and Capacity Approach)

is not only that human life can be much better and much richer in terms of well-being and freedom, but also that human agency can deliberately bring about change through improved social organization and commitment” (Deneulin and Shahani, 2009).

The sharing of available, and sometimes scarce, resources following the 2005 storms played a large role in the marked resilience of the Barataria area. People received assistance from local government, local businesses, and neighbors alike. The interpersonal relationships that exist between members of this tight-knit community made this sharing of resources not only possible, but expected. This expectation on the part of community members to both rely on and be relied upon is considered by many to be nothing more than one’s civic duty.

Civic duty extended beyond community members. Evacuated residents not only shared among each other, but also with outsiders. Many stories were told about residents who evacuated with their entire shrimp harvest rather than let it go to waste. While evacuated, many community members hosted large shrimp boils and dinners for strangers wherever they ended up. In the midst of a crisis situation residents, left with so little, continued to share whatever resources they had.

Along with resources, the residents of the Lafitte area also opened up their homes to friends, family and neighbors. Speaking with five women from the Senior Center over lunch one day, the team learned that even without a home, people in Jean Lafitte were not homeless. All of the women present explained that they simply shared each other’s home until the other houses could be repaired. As homes were repaired, some individuals would move out and begin working on the next home. The high school’s gymnasium also served as a night-time

shelter for some residents. As remarkable as the previous examples of this community’s willingness to share resources, the most surprising story heard was one about the local grocery store.



After the storm, town officials and police who stayed at City Hall made the decision to “break into” the Piggly Wiggly grocery store. City officials and local citizens did this in order to save and share the food available as well as utilize other cleaning and household supplies. The owner of the store explained that he was grateful to City Hall because the workers chose to transfer all of the perishable goods to the freezers of the shrimp boats thereby preserving his inventory and contributing to the needs of the community at the time. Town hall also decided to keep the store open and the rest of the dry goods were left available to the Jean Lafitte community. However, the police transferred all of the prescription drugs in the store’s pharmacy to City Hall for safekeeping. The police kept track of all the items taken from the Piggly Wiggly in case the owner would have wanted to collect payment. Notably, the owner chose not to collect payment for the goods taken during the storm.

The store owner stated that the Jean Lafitte community “really helped out when it came to up-keeping the Piggly Wiggly”. In addition to repairing their own homes, community members collectively came to help clean and



restock the grocery store. One community member mentioned to the team that, “The Piggly Wiggly is the heart of the community—it is Jean Lafitte”. Before the next hurricane season, City Hall had provided the Piggly Wiggly with a gas generator so it could be kept operational during the initial time-period when there would be no power in the town.

These stories illustrate another important finding in the research. Underlying community member’s inclination to share numerous resources with others, there is also a strong sense of individual responsibility for one’s self and toward the community. This sense of independence plus an enduring sense of civic duty could be seen in every aspect of pre and post disaster mitigation efforts.

We dare not undervalue the composure and responsibility assumed by these community members. Make note, that without the help of any Federal mandates or “disaster tool kits” these community members were able to assess the problem, act in a responsible and intelligent manner and make a decision that benefited the entire community.

### **Independent Recovery**

“When people share a sense of purpose, a feeling of empowerment, or awareness that they are agents of their own lives and futures, they can produce more and create more satisfying community” (Anderson,1998:14).

The independent character that is prevalent among members of the Jean Lafitte community likely stems from their agricultural and fishing history. The fishing industry, in which many residents are self-employed, has especially influenced and enhanced this independence. In times of disaster, the independent spirit of Jean Lafitte area residents has led to a more proactive approach to recovery than is



*Photo taken from Bayou Booklets archived through Photovoice Project.*

commonly seen in larger urban and suburban environments.

The town’s constable stayed through both the 05 and 08 storms. In a conversation with him, he affirmed and validated the inherent sense of independence of Lafitte’s residents. The constable explained, “When it came to the rebuilding processes, residents were gutting out buildings and houses between the storms. There was no contemplating about whether or not they should wait for federal assistance.” As stated by the constable, the people, not the government, had long before decided that the community was worth preserving.

The same local restaurateurs mentioned above reiterated the constables’ remarks as they described how they came back so quickly after such a devastating flood. The patriarch of the family said, “As soon as the water receded, the whole family got to work to start cleaning. Everything had to be replaced except the walls, which are made out of cypress and weather water pretty well.” After waiting for the water to recede the family had the restaurant completely repaired and up and running in four weeks.

This independence does not belong solely to the adults. The youth also take their roles seriously in times of disaster. The high school was cleaned within two weeks of Hurricane Rita's destruction due primarily to the efforts of the school's football team. With the help of some adult

Another community member, 18 years old, stated that the only people to help rebuild their house were themselves; her mom, her uncle and herself. Upon reflecting on that time, she explained that she learned a lot about housing construction by way of rebuilding her house from the bottom up. While her uncle did most of the primary wiring and plumbing, she helped with everything else. This story relays another integral facet to the overall resilience of Jean Lafitte; the passing of skills through generational learning contributes to a community with a long tradition of independence and a wide range of skills.

### **Diversity and Range of Skills**

"The principle resources available for recovery linked to sustainability are the people themselves and their local knowledge and experience. By mobilizing this resource, positive results can be achieved with modest outside assistance. Individuals and groups across all sectors should participate in recovery planning" (Gist,1999:20).

The people of the Barataria region possess a wide range of practical skills that have proven to be useful in the days leading to and in the aftermath of a disaster. These wide skill sets are, in part, the result of generations of families working in the fishing industry and other subsistence livelihoods. As men were away from home and on the water for long stretches of time, the division of household labor became less gendered. Out of necessity, men learned to cook on their boats, while women learned

various building and repair skills at home. Additionally, given their relative isolation in the southern reaches of the parish, residents of Jean Lafitte often had to build structures for themselves. As a result, there is a legacy of contractors, builders, and repairmen in the vicinity whose skill sets made significant contributions to the community's ability to begin recovery right away.

The Senior Center Director and citizen activist, emphasized that the men in the area are unique in that they are working men who are Jacks-of-all-trades. Referring to the days just after Hurricane Rita, she revealed with obvious pride, "They can cook, fish, clean, and build, so they were well prepared to come back as an advanced clean-up and repair party".

In this case because many of the Barataria region's men earn part of their living off of the surrounding waterways through fishing and shrimping, they are often out on their shrimp boats for weeks at a time depending on the amount that they are catching and how well their boats are equipped. Working out in the gulf or on the edges of the coast requires a level of independence and working knowledge of a variety of different skills. Shrimpers and other seafood harvesters are essentially, plumbers, biologists, electricians, construction workers, environmentalists and chefs all rolled into one. The fact that these residents possess multiple skills is clearly an advantageous resource in understanding the complexities of sustainable rebuilding.

*"People down here work."*

A conversation with a local shrimp processor and distributor, reiterated the idea that knowledge of fishing, hunting, and trapping also translates to knowledge of building as well as trade and commerce. He explained that the

fishers are men of all traits and elaborated that because these men are constantly working on and fixing their boats they are handy men when it comes to electric work, carpentry, boat piloting, welding. Though now non-operational, skills learned through seafood packaging, marketing, and shipping are also still retained within some community members. This range of skills does not in any way limit itself to the men in the community. Fishers include women. Some women fishers own their own boats, work as deck hands, or work side by side with their friends and family members. They have skill diversification that includes knowledge of the fisheries and of boat maintenance

For many in the area oil became a supplemental form of income during the off season. Oil exploration in this small fishing village began in 1927, and the first oil well in this area was drilled in 1935 (Loumiet,1983). By 1941, Chevron had drilled 18 oil wells and by 1957 Texaco had drilled and was operating 87 wells (Loumiet, 1983). As there was an increase in the presence of oil related jobs, the community adapted their skills to meet the economic opportunity. These skills include marine piloting, safety and rescue measures, drilling techniques, concrete applications, and over-all construction related skills.

The team's initial assessment looked at the relationship between the economics and the types of skills derived from participating in such diverse jobs. Findings indicated that not only was the local economy important, but that a significant process of generational learning and the passing down of traditions was taking place. It is the accumulation of traditional knowledge over an extended period of time, plus the intimate understanding of the local environment that allowed for such a diversity of skills within the community.

While still very popular activities, few residents rely on hunting and fishing as their primary sources of income. The owner of Nunez Seafood, told us that twenty years ago there were approximately 200-licensed fishers. Of those 200-licensed fishers, there are only approximately 70-75 licensed fishers left, and approximately 25 of those fishers are working commercially. Due to the competition of imported seafood as well as the steady increase in the price of fuel, fishing and shrimping is a far less lucrative occupation than it was previously. For most Jean Lafitte residents, fishing and shrimping may soon change from a source of income to an activity of leisure, family food source and cultural continuity.

*"The fishers are both men and women;  
Its a family affair."*

Some local restaurateurs conveyed the applicability of generational learning and traditional knowledge. When asked how the men and women learned the skills to rebuild, the matriarch of the family, pointed to her husband and said, "He can build anything". The family's grandfather used to be a boat builder and was one of the first people to use aluminum for construction material. He established his boat building company and constructed is home all by himself from the ground up. In so doing, he learned about structural construction, plumbing, electric work, and mechanics. The next generation enjoyed the benefit of learning the same skills through working in the family business. Taking the combined knowledge of his mother's cooking and his father's building, their son now runs the family restaurant.

This generational knowledge has been shown to be a critical key to the Barataria region's resilience. Evidenced by his capacity to rebuild after both Rita and Gustav, this local businesses



*Photo taken from Bayou Booklets archived through Photovoice Project.*

owner has rebuilt his restaurant twice without needing to hire any outside or additional expert help. Using his own tools and his own knowledge of construction, plumbing, and electrical work, this business owner, his family, and neighbors showed that they are capable of effectively relying on their own skills and knowledge to prepare for and recover from disaster situations. While Barataria area residents were sharing their rebuilding skills, other residents of the New Orleans area were waiting for skilled laborers and contractors to begin their gutting and rebuilding.

### **Gender Equality**

The work that women do within a community is often overlooked. This work within the community is often referred to as the third sphere following public and private. However, women's roles in the third sphere are vital to the maintenance of trust among community members and therefore vital to maintaining resilience. Milroy and Andrew (1992) define women's role in community work as work done outside of home and work. They explain, "It can be political or publicly directed, yet often appears to be maintenance work—part of the 'social glue' which holds a community together.

Although it is not paid work, it is also not "voluntary" in the sense that it is not discretionary...Its spacial location is neither home nor work place, primarily, but community" (Fothergill, 2004:11). Furthermore women's work in the third sphere is also, "more inclusive than formally organized volunteer sector, because it includes small and informal neighborly care-giving actions by individuals or organizations" (Fothergill, 2004:11). While the women in the Jean Lafitte area are adept at fostering trust and care giving through informal avenues within the third working sphere, they are equally adept at what many would consider non-traditional female working roles.

When picturing the roles taken on by men and women, people often picture the women engaging in domestic duties (i.e. childcare, cooking, and cleaning), and men engaging in the public sphere as well as engaging in activities that require physical strength. Observing the community of the Barataria area one would not find the residents adhering to commonly held expectations about gendered roles. In small, semi-rural communities, like Jean Lafitte, traditional gender roles dissolve in order to maintain a well-functioning community.

The men of the area have been shown to possess a great number of skills. Equally, women who, in general, tend to stay in town learn automotive mechanics, a myriad of household construction related skills, and maintain daily life like cleaning and meal preparation. Some literature has depicted women as victims in times of natural disasters. However, the women in this community are anything but victims. This project affirms that women play a vital role in developing and sustaining the culture of resilience of the Barataria Region.

This un-gendered work was especially prevalent after the experienced disasters. During the rebuilding process after all four observed

hurricanes (2005 & 2008 seasons) it was clear that the area residents responded to whatever task needed to be done regardless of traditional gendered jobs. Men, women, and children all took part in preparing, rebuilding, and implementing adaptive mitigation efforts after the fact. A prominent theme heard within the conversations iterated that the entire family “pitched in” to help. In Southeast Louisiana the defining features of the “family” does not necessarily follow blood relations. Rather, neighbors and friends are consistently included in the conception of 'the family'.

### **Evacuation Planning and Communication Networks**

Trust among citizens and authorities is the greatest factor when deciding whether or not to evacuate. Residents who feel strong trust among their neighbors and between local authorities are more likely to evacuate in a disaster situation than those that do not (Gladwin et al., 2001). When agencies fail to reach populations because of lack of trust, lives are lost during evacuations (Phillips and Morrow, 2008). This section will explore strategies used for effective evacuation and re-entry.

National and local media coverage relevant to Jean Lafitte was non-existent after the storm. New Orleans remained the focal point of media coverage leaving many others with little to no knowledge of the situation in their own towns. For the residents of Jean Lafitte this isn't new. They are used to being left out. As one community member pointed out, “Ain't nobody down here checking on us.”

Anticipating the lack of news coverage via formal communication routes, residents created their own informal chain of information. In general, with impending storms, clusters of families and friends will evacuate together to a

central location. Because they go together they are able to combine resources and share information with their group and extended kinship ties.

Both men and women were active in communications that maintained important family and neighborhood linkages. This is markedly different from research on other communities, in which findings indicated that communication was primarily a female activity. (Brown, 2006) The participation of both men and women in maintaining the communication networks may be attributed to vocational activities. When family members are regularly separated by lengthy stays off-shore (oil industry) or during several day fishing trips, the need for good communication becomes both a social norm and useful skill during disasters.

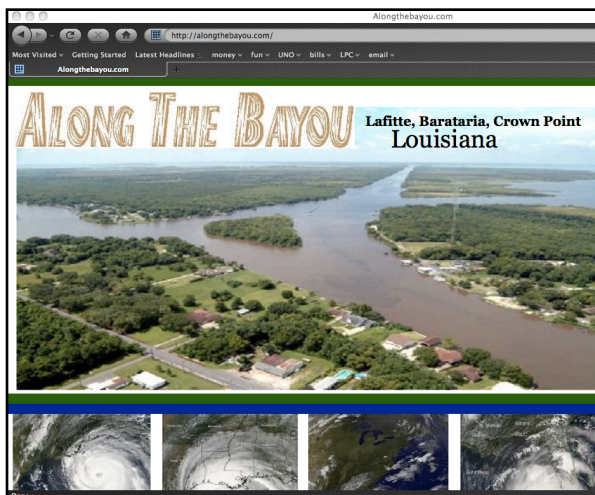
The informal communication networks set up by community members allowed them to stay informed about the Jean Lafitte area while the national media was focused elsewhere. This information was vital to residents' decisions about when to return home and what materials were needed for rebuilding. These subtly sophisticated, yet simple networks aided in the assignment of roles and division of labor, and garnering of resources as community members began their journey home and their recovery process.

Town hall became an important locus for information. It served to field calls from the area's dispersed residents in need of information. One story in particular stands out as a perfect example of local community ingenuity. After Katrina, a charter boat captain, having evacuated by boat, shortly returned to the area. He brought with him a digital camera and upon his own volition began to take pictures of his neighbors' houses. He then posted these pictures on his company's website, allowing those evacuated to see the damage and

better prepare for return. Soon, the website was flooded by requests from other community members for pictures of their homes. The captain met every single request. This informal idea became an important avenue of sharing information with community members spread out all over the country.

The photos posted on his website enabled area residents to better prepare for return. They were able to assess the amount of damage they were returning to and gather supplies accordingly. For most residents these photos were critical to creating a plan for return.

Inspired by the utility of this website, another community member and employee of the Piggly Wiggly decided to create a website for Jean Lafitte after Hurricane Katrina called Alongthebayou.com. With support from her employer the webmaster included on the site a forum for discussion, news updates pertinent to the area, and photos of the past as a common resource for the benefit of the region. In this way, the website acts as a community archive. History, as mentioned, is extremely important to the Barataria region residents. The website allows them to preserve the past and in so doing provides a tool with which reflexive processes can take place that can further adapt appropriate disaster responses and mitigation.



The webmaster explained that during a disaster situation, the website could be useful as a secondary source of information and communication similar to the charter Boat site. The site's forum is open to anyone who has a post thereby serving as a free site for sharing and dispersing important information and strengthening social networks. Photos are easily uploaded to the site thereby creating a local media source where one has been lacking.

The site's webmaster hopes that Alongthebayou.com can become a resource to all community members that can further facilitate inter-communal bonds. Alongthebayou.com has since added a Facebook page to which several community members post news, chat, and blog. Where national media sources fail to inform the public, small locally-run websites, like Alongthebayou.com, can step in and serve as that necessary communication link.

Resilience and the creation of greater resilience requires creative thinking. As the environment is constantly changing, the methods by which human needs are met are constantly in a state of adaptation. In the Barataria region evacuated community members needed information on their area. Seeing that this need was not met by formal media avenues, the community members recognized the need to adapt. Therefore, they got creative and figured out a way to use a business oriented website as a disaster information site. Then recognizing the utility of such a site, decided to get even more creative and built another website designed specifically to foster and enhance intra-communal communication, information sharing before, during and after a disaster, as well as retain important cultural and historical archives.

## Sense of Place

A key to understanding and increasing resilience as it pertains to the Barataria region is the concept of place. It is obvious, and therefore often overlooked that resilience or the lack there of is always contingent upon some place.<sup>2</sup> There are many activities, rituals, and living patterns that reflect community member's attachment to and protection to this place. Place tends to be a relational and normative term and, therefore a social construct. Because 'place' (even wilderness place) denotes some human and social relationship (Casey,1993) place cannot be separated from community.

One elder in the community illustrated the depth of community members sense of place with the team during a walk through the local cemetery. The elder was able to share with us stories of the departed, list the surviving family members, their current geographic locations, and their roles and relationships in the community currently. This highlighted how deeply individuals are attached not only to the area, but to other community members. Even after death, community members are tied to the area through remaining family members and friends.

Similarly, one of the town's Catholic churches hosts the St. Joseph's Altar each year on which community members place photographs of the deceased loved one's along with other personal effects and often their favorite foods. It is a week long event meant to honor and remember family members, friends and neighbors. Around the altar stories are told and community members reminisce about the deceased. The Barataria area is a place where community

members are remembered and tied to the area through generations.



Throughout the year the Barataria area hosts numerous celebrations including the annual Pirogue Races, the lighting of the town hall Christmas celebration, and the mid-summer Seafood Festival. The festivals as well as those informal gatherings are times when community members come together to strengthen interpersonal and familial relationships and honor the unique qualities of their area. This is one important avenue toward fostering a strong sense of place and attachment to that place.

The activities of the Better Swamp and Gardens Club are good examples of place attachment through citizen stewardship. This club is responsible for hosting the annual Iris Festival, a native flower to the wetlands, and maintenance of the Nature Trail in the town's common area. Members of the club take great pride in their stewardship projects throughout the area.

All of these cultural events give evidence of community members' willingness to invest time and energy into this specific place. A strong appreciation for one's place and one's social networks fosters place attachment. Place

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<sup>2</sup> Scientists (Thayer (2003). Suzuki (1987).; Berkes Colding and Folke (2003). Berkes, Fikret (1998). philosophers (Malpas, (2006, 1999). Casey (1993).,geographers (Buttimer (1993). Rowles and Chaudhury (2005). Seamon (1979). and social scientists (Crampton. (2007).

attachment is the result of an emotional, cognitive and experiential relationship between people and a concrete place and among those individuals that reside within the place. This place attachment takes place because of the close-knit nature of the community and their relationship with the concrete geographic place.



## The Commons

Having common shared resources and resource pools that are central to the wellbeing of a community is in part, integral in the attachment to place. The commons, is an ancient concept of mutual sharing in various aspects of a person or community's everyday living. The commons can be the mutual area for social discourse, networking or support. It can be environmental or a preserve that is set aside for eco-system balance, recreation or enjoyment. The discussion of commons in recent literature, especially that of resilience, is how it is understood in the management of common pool resources such as fisheries, forest or water resources. The recent proliferation on the work of commons, is in part due to the

recognition given it by such academics as Elinor Ostrom, 2009 Nobel Laureate and that of her colleagues in the International Association for the Study of the Commons. It is an essential literature to the understanding of resilience for coastal communities due to the integration of limited resources and their healthy management as well as the health of the society that is connected to those resources.

In a forthcoming book edited by Poteete et al., Janssen and Ostrom try to account for the variable that accounts for cooperation. No other variable had as much impact on the work of cooperation in common pool resources than did trust.

The well-being of the commons be it social, ecological or economic depends on the development and maintenance of trust. Reputation of participants and the ability and capacity to participate or not in the common resources adds to the level of trust. As noted in the preceding sections, trust is a central core to the dynamics of the community be it social, political or economic.

The area around Jean Lafitte has indicators of a social, political, economic and environmental commons. Jean Lafitte's geographic location makes it a bilinear design spanning the banks of Bayou Baratavia. The area near the ground-level bridge that connects these two banks is the locus of the community. This intersection represents a central location for the social and political commons, designed specifically as an area for connectivity. All three schools, two churches, the Senior Center, Post Office, the Head Start building, Town Hall, library, theatre, and the community disaster safe house are located in this central spot which allows for optimum communication and social networking.



Also within this same area are numerous businesses such as the grocery stores, snow ball stand, that are all within walking distance of one another and the public sector entities. The commons that encompass the natural resources of the area physically surround the social and political commons, the bayou, nature preserve, walking trail, and wildlife museum, all accessible by the community through trails and community activities. The bayous are used for recreation, commerce and community events such as the annual pirogue races and the ‘blessing of the fleet’.

The area can also be considered a common pool resource due to the rich estuaries that provide the community with fish, oysters, crabs and shrimp. The discussion of the use of this common pool resource has been carefully monitored and evaluated by the local fishers as described in the discussions with the Nunez Seafood Company. Most recent discussions regarding the care and protection of this resource has emerged from the four hurricanes and now the oil disaster.

In understanding the dynamics of the sustainable use of common pool resources, it is important to recognize that public care, respect and regulation are critical to keep such common resources viable and resilient. The ways in which community members of Jean Lafitte have used resource commons has changed and adapted over time to respond to the needs of the current generation. At the same time, this adaptation is mindful of the common pool resources that are also the future of the region as well. The care for these resources and the trust that others will care for these resources, establishes a sense of direct ownership, common stewardship and a heightened understanding of the value of these resources. In that attachment and care also lies their resilience.



# Biography of Jean Lafitte

## Hurricanes

Before the 2005 hurricane season residents of the town of Jean Lafitte and surrounding areas can recall only one other hurricane having significantly flooded homes and businesses in the area. Hurricane Juan struck the town of Jean Lafitte on October 29, 1985. Juan was a small hurricane with a category one status. However, it brought a storm surge 40 to 50 miles inland bringing water ranging from a few inches to several feet into the majority of homes (Times Picayune, 2008). Hurricanes before Juan, elderly residents attest, only caused minimal damage to this bayou area.

However, in a three-year time span 2005-2008, this area has been impacted by four major hurricanes; two of which had major effects on the area mostly due to flooding. Despite the fact that Hurricane Katrina made national news, it was Hurricanes Rita and Ike that caused the most damage to Jean Lafitte. Hurricanes Katrina and Gustav affected the town and surrounding areas, but caused a minimal amount of structural damage.

Even though homes and businesses remained intact, almost all residents evacuated for the storms. With gas, hotel fees, and food expenses even one evacuation puts a strain on households. The financial toll on residents becomes exceedingly difficult with multiple evacuations.

## 2005

Hurricane Rita hit Louisiana on September 24, 2005, bringing with it a storm surge of four to five feet. The storm surge pushed water into the majority of homes in the southernmost parts of Jean Lafitte. Access to the Barataria region was blocked by storm debris and water throughout the region. Federal and state government

officials enforced blockades along many southeastern Louisiana roads to prevent exposure to the hazards created from the debris. Because residents were anxious to return to assess the damage, they did so by boat, using the familiar waterways to get back home. Residents commonly used the term “sneaking in” to refer to returning back to town by circumventing the mandated roadblocks.

It is critical after any hurricane that structures are assessed and attended to as quickly as possible to maintain structural integrity. Those residents that “snuck in” evaluated the damage inflicted on their homes and began the clean up process and took immediate remedial action. One popular method of preserving structural integrity was to drill holes in the floorboards. This allowed the water to drain faster, which allowed the structure to not only dry out, but also decreased the amount of mold growth within the building. The types of tools and materials that citizens brought back with them was a direct result of the information gained through the aforementioned charter boat site. This illustrates community member’s adaptability by combining technology and historical knowledge for improved mitigation and increased resilience.

Due to the extensive amount of water from Hurricane Rita, two auxiliary pumps were needed to completely drain the town. Electricity was offline for two weeks. Prior to hurricane landfall, sandbags were filled and laid by the citizens and city officials. The debris removal process only took two weeks following Rita.

Jean Lafitte's town hall is more than a political center. Because it never closed during any of hurricanes, and was already established as a commons, it organically developed into a common area for resource sharing. This meant

that civic employees stayed on site to handle any unforeseeable situations that arose as well as to assist residents' evacuation and provide a safe place for those who could not evacuate. In the emergency phase that followed the storm, the town hall became the center of disaster recovery operations. Temporary care was provided for medical needs using a tent adjacent to town hall. Positioning centers for initial provisions such as food, water, ice, and basic tools were set up near town hall. As space became available, rebuilding supplies and cleaning supplies were also provided. Most importantly the town hall served as a locus for information as the residents gathered with one another to seek assistance, advice, and share stories.

Some businesses were able to open within weeks of the hurricane while some others remained closed for months. One major obstacle to reopening a small business was that the owners and employees were simultaneously juggling the multiple barriers impeding the process of rebuilding their own homes. Another obstacle for commercial recovery was the difficulty in getting the supply chains access to the region due to road blocks.

The elementary school did not receive damage from the hurricane, but the middle and high school flooded significantly. Due to the efforts of the school's teachers, students, and the football team, it took less than two weeks for the school to re-open. Because it was repaired so quickly, the schools' gym also served as a temporary residence for citizens by night, and used by the school for regular functions during the day. By contrast, some schools in New Orleans, as of Fall 2010, have yet to be repaired from hurricane damage.

## 2008

On September 1, 2008, Hurricane Gustav made landfall near Cocodrie, Louisiana as a category three hurricane. Hurricane Gustav was projected to have monumental effects in the area. However, there were only minimal amounts of structural and flood damage.

Ironically, what happened in 2005's storm pattern with Katrina and Rita, happened again in 2008 with Gustav and Ike. Two hurricanes, one month apart, struck southeastern Louisiana. Though in both cases Katrina and Gustav were projected to be the most severe for the Barataria region, it was Rita and Ike that brought the most devastation through flooding effects. Like Hurricane Rita, as Hurricane Ike approached the coast, the storm surge inundated the town with water. However, Ike's storm surge was even worse than Rita's. Flood waters were approximately one foot higher than the surge three years earlier. This water went into a majority of residential homes and businesses that were not elevated. Residents make the connection between the rising levels of storm surge associated with hurricanes and the visibly evident erosion of the coastal marshes.

During Hurricane Ike, nineteen additional pumps were needed to pump the water out of town. In this case, not only was there more water inside the town, but because of the general subsidence and amount of land loss, there was no place for the water to go. It took about a week for the bayous' water levels to drop enough to begin pumping the water out.

Notably, the recovery time for major institutions like the school and grocery store was comparable to that of Rita despite the increase in flooding and destruction. This indicates that residents were implementing best practices, learning from the past, and adapting

to current needs. Recent conversations with community members also suggests that they may have benefited from participating in the resilience focused reflective process with the UNO-CHART team in 2006. Measures that worked in the past were utilized again and those which were least effective were adapted. Again, Town Hall became a commons of operations such as it did following Katrina and Rita, supplying residents with many resources they needed to once again begin recovery.

With the threat of hurricanes increasing every year, outsiders often wonder why residents of this community choose to live in a place of constant threat. To fully understand the reasons they reside in this community, it is crucial to understand the history of the Barataria region. The rich history of coastal Louisiana fosters a sense of place and sense of identity.

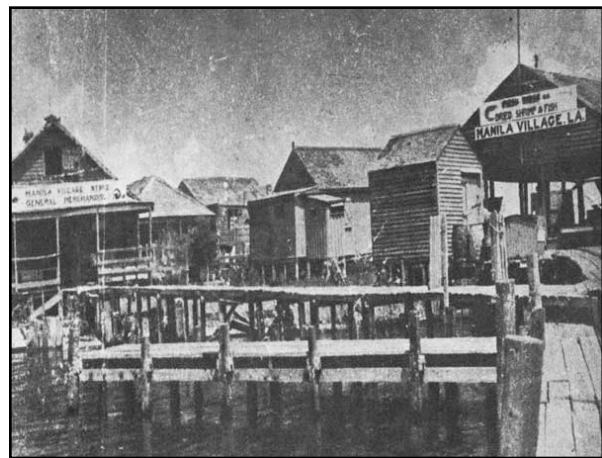
## History

The history of the Barataria Region is intimately tied to its location along the water. Indeed, the people who live here call themselves 'water folks'. The natural resources drawn from this area have strongly affected the customs, cultures, and livelihoods of the people living in Barataria. From its very beginnings, the land of Jean Lafitte and the Bayou Barataria region have been a place with an abundant amount of resources including cypress trees, fish, and Spanish moss.

The early European settlers used cypress trees for building, Spanish moss for stuffing mattresses and pillows, and fish and other seafood for subsistence (Swanson, 1975). Much later, Spanish moss became an important export for the area used in such products as the Ford Model T bench seating. Deer, bison and alligator were abundant in the region and were commonly used for food, clothing and a variety of other uses.

Due to the vast amount of resources, the resourcefulness, and the adaptability of the residents, Southeast Louisiana provided almost everything needed for basic daily living and lucrative trade partnerships. Products became easier to trade through the development of the canal built in 1735, connecting the Mississippi River to the Bayou Fatma Branch of Bayou Barataria. (Loumiet, 1983)

One important center of trade was the Manila Village, (1896 - 1965) a shrimping village south of Bayou Barataria inhabited by 200-300 residents (Espina,1988). Filipinos largely populated the Manila Village, which was aptly named after the capital city of the Philippines (Swanson, 1975). In particular this trading post not only provided resources to extreme coastal outliers, but also helped to diversify the population of the Barataria Region.



In 1826 the Marvis Grove Plantation marked the start of the plantation (farm) era. The plantations grew crops such as corn, cabbage, potatoes, and sugarcane (Swanson,1975). There were 14 other plantations in Barataria including Christmas, Kenta, Ackbar, Ida, and Unity. These helped to transform the area of Jean Lafitte from solely a fishing and trading village to include agriculture. (Flemmings Plantation, 2008). Today, agriculture makes up a very small portion of the economy. Agriculture has not

only been lost to time, but also to water. Much of the land that was once used for either crops or cattle is now underwater. “The Pen”, for example, was once about 4,000 acres of coastal plain used for cattle grazing. Today, the land has subsided and is submerged into a lake about four and half feet deep during high tide.

## Housing

The construction of the permanent houses in Manila Village serves as a prime example of the value of traditional knowledge. Long before the leveeing of the Mississippi River, the residents of the area were well versed in tidal effects, seasonal river flooding patterns, as well as the occasional hurricane. With this knowledge, the residents of the Manila Village built their houses on platforms that were raised up on stilts and connected by boardwalks along Bayou Baratavia. These houses set a precedent for flood mitigation through structural elevation.



Houseboats were also introduced to the area as an affordable alternative to elevating and evacuating a standing house. Many fishers in the early 1900s lived on houseboats. Houseboats were an ideal option for fishers because they allowed fishers the flexibility to manage home and work life easier. For example, fishers living on the water could go out and make a “drag” or “throw out a line” while eating breakfast. Today, few reside on



house boats though in the future as the land continues to disappear this may become a more common option.

Unfortunately, since the leveeing of the Mississippi river and the drainage of the swamps, local residents have come to regard southeast Louisiana as relatively protected from such seasonal flooding events. Hence, much of the housing built since the 1950’s has resisted such built-in mitigation measures and are, in effect, less resilient than the area’s earliest structures (W.Curole, personal communication, January 3, 2009). Experiencing the recent flooding events, residents with the ability have replicated these early adaptive measures. The community has begun supportive measures to begin elevating homes in earnest.

The livelihood, housing and creative ways in which the people have adapted over the centuries is partly due to the isolation of the area. Geographic isolation has also had a positive effect on the historical and social identity of the area. Due to the difficulty of getting to and from this area residents became highly self-reliant by doing for themselves and learning multiple skills through necessity. These are two qualities that can still be found in the Baratavia Region and its residents today, which have significant positive affects on the community’s disaster resiliency.

# Methodology

- Traditional Knowledge
- Participatory Action Research
- Declaration of Principles
- Entree
- Semi- Structured Interviews
- Community Reception and Shrimp Boil
- Cross Coastal Resiliency Forum

## Traditional Knowledge

The dominance of Western ways of thinking, i.e., epistemology, about the world is widely acknowledged (Wolf,1983; Smith,1999; Trouillot, 2003). This exclusive epistemological focus has depreciated the perceived value of alternative ways of knowing. The acknowledgment of this has led many reflexive researchers to increasingly focus on indigenous or traditional knowledge, as well as collaborative research methods. Both of these focal points can aid in making research holistic, equitable, and just by ensuring communities' representation in research projects. According to Berkes, Colding and Folke, "Interest in Traditional Ecological Knowledge (TEK) has been growing in recent years, partly due to a recognition that such knowledge can contribute to the conservation of bio-diversity, rare species, protected areas, ecological processes and to sustainable resource use in general" (2000:1251). Local knowledge about the community and its surrounding areas is invaluable to the process of identifying and enhancing resilient actions that will reflect and meet the needs of the community. As Freeman argues, "It is important to note that such traditional ecological knowledge has been found to have management relevance, especially in regard to sustainable use of renewable resources" (Freeman, 1991:1).

Thus, the team approached the project with a specific intent to focus much of our effort to understand community members' local knowledge as it pertains to disaster mitigation recovery, and resilience. Freeman shows how communities often create, through experience and the experiences of older generations, their own best practices suited for and specific to local issues. Over time, possibly through many trials and errors, best practices emerge and are shared among the community. This, in effect, assumes a form of local common sense.

John O'Neill argues that human order tends to rest on relational knowledge of our own needs and the needs of others. He says, "The human order is initially a pre-theoretical institution, resting on the unarticulated 'commonsense' knowledge of others as 'kindred' with whom we experience dependable needs and wants, expressed in the 'relevances' of time, place and the human body" (O'Neill, 1985:56). Furthermore, O'Neill states that, "commonsense knowledge and values do not depend upon scientific reconstruction for the exercise of critical reflection. It is a prejudice of science and philosophy to think of common sense as a poor version of reason" (O'Neill, 1985:55).

Because much of this research focuses on acknowledging and understanding the resilient activities of Jean Lafitte as the residents

Team begins historical and current data collection for Jean Lafitte.

Team completes rough draft of The Declaration of Principles for working with communities.

Park's reflective, relational, and representative knowledge types are applied to team notes.

understand them, the team chose to use a Participatory Action Research (PAR) methodology as the most appropriate in order to respectfully work with the community. PAR acknowledges the importance of relational and reflexive knowledge among individuals as well as the importance of traditional knowledge retained within a community. This research finds that all three kinds of knowledge; representational, relational, and reflexive, are integral to the ways in which Jean Lafitte responds to disasters. In reflection, the PAR model was appropriate and necessary for the high level of citizen engagement. This intentional creation of a mutually trusting relationship between the team and community members provided a platform for true public discourse.

### Participatory Action Research

Park (1993) has been a participant in the development of Participatory Action Research (PAR) with significant others including Fals-Borda (1991) and Paulo Freire (1996). PAR is based upon the underlying concept that participatory research is an emancipatory, democratic, and dynamic process. In order for PAR to be successful, it must create the kind of trust that enable people to be creatively engaged. This collaboration aims not only to balance the power differentiation between and promote the self-actualization of collaborating parties, but also to provide a forum in which the examination of the interrelationships between partners and the effectiveness of the research process can take place (Reason and Bradbury, 2001). This collaborative reflection can improve the capacity of governmental agencies, academic institutions, and local communities to work within and between one

another toward finding practical solutions to problems.

Participatory research differs from both basic and applied social science research in terms of people's involvement in the entire research process, integration of action with research, and the practice-based nature of the knowledge that is entailed. It sets itself apart even from other forms of action-oriented research because of the central role that non-experts play. Kemmis and McTaggart (2005) suggest that there are six important aspects of PAR – they suggest that PAR is a social process, is participatory, is a practical and collaborative, is emancipatory, is critical, and is reflexive. PAR is a philosophical and methodological process for a people to gain equal voice, which helps bring those with less political power into the public sphere in order to create effective mutual collaboration and problem solving.

“ The central purpose of PAR is to fulfill the visions of the community.”

PAR is a method based on the aforementioned understanding of knowledge discourse. Through the use of mutual knowledge development, the inconsistencies can be addressed that liberate all parties. In many power struggles, those without power seek to either replace those with power and thus become the oppressor (Fanon, 1961) or to be co-opted into the dominating role. Through the mutual desire to find truth, inconsistencies in systems and structures of power and dominance, they can be analyzed and changed. Through analytical discourse that leads to action (be it change of self or systems) knowledge is created and movement at some

Team begins to consider point of entree into community

Team attends first public meeting in Jean Lafitte

Team prepares for first meeting with Mayor Kerner

level occurs. Park believes that the utilization of PAR in communities can be considered a best practice within community based research, because it affirms and utilizes the community's knowledge and belief systems and is not only emancipating but fosters creativity and imagination. The vision of the community's future is fostered by creativity, imagination, and joint participation.

Participation in a truly participatory sense is discourse (Habermas, 1987; Kemmis, 2005) between equals who are called co-learners. To speak of participants as equals does not mean that they all have the same knowledge or abilities but that the input of all is respected. The PAR process encourages full participation in the process from visioning and problem identification through creating an approach to solve it design, information gathering, to reflective evaluation and re-visioning. Reflection means reflecting critically about the method used, the data collected, the outcomes achieved, the shortcomings of the process and the biases of the participants. It is an essential part of the PAR process.

PAR is based on the well documented premise that people working together are more likely to be democratic and the results are more likely to be implemented, supported and be successful (Scott, 1998). Therefore, a goal of Participatory Action Research (PAR) is to enable the voices of all parties involved to be heard consistently and with equal power. However, within PAR projects, collaborations occur between representatives of institutionally powerful organizations, such as universities and local communities. Essential to the success of such collaborations is a commitment by these powerful organizations to engage the

community in ethical, equitable, respectful, and socially responsible ways.

### **Declaration of Principles**

A goal of Participatory Action Research (PAR) is to enable the voices of communities to be heard consistently and with equal power to all parties involved. However, within PAR projects, collaborations occur between institutionally powerful organizations and local communities. Essential to the success of such collaborations is a commitment by these powerful organizations to engage the community in ethical, equitable, respectful, and socially responsible ways.

According to Kemmis and McTaggart (2005), PAR is a critical and reflexive social process that aids people in breaking out of oppressive and unjust social structures, including the positivist discourse underlying most social research methodologies. In beginning our reflection, we came to recognize that the institutional power possessed by a university and a government agency greatly outweighed that of the community, and this brought to the surface a plethora of concerns that pertained to the valuing of local knowledge, effective communication, and the prioritization of the community's vision.

These concerns led us to create a Declaration of Principles for collaborative research. Through the creative discourse of compiling this list and sharing it with both NOAA and communities with whom we had a preexisting relationship, the team came to the realization that the preparation of the Declaration itself presumed our right to develop a project and to engage the community to participate. Though the team believes the Declaration of Principles



### **Declaration of Principles Lafitte/Crown Point/Barataria**

These principles of Participatory Action Research (PAR) are based upon the underlying concept that such research is a dynamic process in which all participants possess the courage to engage in collaboration, a goal of which is to balance the power differentiation between and promote the self-actualization of collaborating parties. Essential to the success of such collaborations is a commitment by the large partner organizations to engage the community in ethical, equitable, respectful, and socially responsible ways.

#### **Openness and Honesty**

From the start, we strive to clearly explain the strengths and limitations of our participation, taking care not to make claims of results that exceed our true abilities. Such openness is intended to foster a true two-way relationship. We attempt to be transparent about our abilities and aims and open to input and advice from the community.

#### **Clear Communication**

Clear and inclusive communication among all participants is of the utmost importance throughout our collaboration. We intend to facilitate communication among all involved parties, and to ensure that individual roles as well as institutional roles are as clearly understood as possible. Open dialogue is essential for all partners and information must be dispersed to all members participating in the process. Due to the challenging nature of maintaining an open dialogue, it is necessary for collaborators to regularly self-assess the adequacy of dispersion of information to other members of the collaboration.

#### **Commitment to Resources**

Within the context of limited resources, UNO and NOAA are committed to helping the community with any available resources at our disposal and locating other partners in community enhancement and resilience.

#### **Commitment against Harm to the Community**

No harm should ever come to the community due to financial, intellectual, or other negotiations

is accurate in illuminating potential pitfalls of collaborations among partners with markedly different amounts of power, and thus could help mitigate these pitfalls, we also recognized the need to reflect on ways to ensure that researchers' presence in the community is wanted, constructive, and just.

#### **Entrée**

Though many avenues for entrée were suggested prior to entering the field, the team decided to initiate our entrée through the formal avenue of the Mayor's office. During our pre-entrée research we discovered that the town's current mayor was elected by nearly 95% of the vote. In light of the town's favorable view of the mayor and our desire to show deference to the status of the mayor, the team chose his office as our point of contact. This proved to be a beneficial decision in that our contact with the mayor helped to open several other avenues. By recognizing his authority the team came away from that first meeting with the mayor's endorsement to continue the entrée process. He went so far as to suggest several other residents and invited us to contact them. It is noteworthy that the Mayor did not refer to a Rolodex or his secretary. He not only personally knew numerous potential residents, but was able to give the team names, addresses and phone numbers from memory.

With the mayor's support the team continued a slow entrée process. We continued to remain respectful of the resident's needs and did not attempt to over burden them with requests for conversations and meetings. As suggested by the mayor, the team contacted the Senior Center, which soon became an important link with the community. Along with contacts provided by the mayor and through the Senior Center the team also made contacts through the town's local businesses. From the local grocery store, to restaurants, to the shrimp

between UNO and NOAA. If disagreements should occur between these two organizations, it is imperative that the community's vision or well-being not be affected. The community should also never be used in such a way that benefits UNO or NOAA without also benefiting the community. Full disclosure of invocations of the community's name must be adhered to, in order to ensure that the exploitation of the community never takes place for the benefit of any others, even in situations of innocent intentions.

#### **Valuing of Local Knowledge and Input**

We appreciate the value and importance of the knowledge held by residents of the community about their physical, natural, and social environments. We fully intend to not only respect and consider such knowledge, but to actively seek it out in order to more fully comprehend the needs and values of the community. Local knowledge, reciprocal input, and a sharing of an understanding of each participating groups' respective values are the foundations upon which this research is built.

#### **Inclusion of the Entire Community**

We aim to be inclusive of all parts of the community. Though email will be a primary means of communication, we recognize that not everyone has access to email. We will make every attempt to ensure that we have some means to get in touch with all parties who wish to be involved in the research process. A very basic goal of PAR is to assist in developing personal/ collaborative capacity among as many members of the participating organizations and community as is possible.

#### **Flexibility**

We aim to be flexible in all of our collaboration, not only with the time and scheduling of meetings, but also with the approach of the work we are collaborating to do. In PAR, deliverables should be couched in broader terms. Such an approach will allow the collaboration to be more flexible. The goal is to be adaptive, so that a change in course can be facilitated if such a need should arise or be perceived as beneficial.

#### **Consideration of Time**

We recognize that the community is busy, and that time spent in collaboration is time spent away from family, work, leisure or other activities

docks and the school, we were able to speak with a number of middle-aged residents ranging between middle and working class to compare their disaster stories and recovery methods.

### **Semi-structured Interviews**

Because the primary goal was to build a trusting relationship between the community and the research team, our original plan of action was to engage the community in conversation as informally as possible. Therefore, prior to entering the community the team had not created a highly structured interview schedule. Unlike quantitative research methods, our research methods did not intend to use formatted interviews in order to gather our data. Rather, the team's desire was to engage community members in casual conversation with the hope that issues of resilience would tend to emerge on their own (Herda, 1999).

However, the team found that despite our efforts to engage the community informally, it was necessary to introduce ourselves as students and researchers from the University and thence explain why we were there. After this necessary introduction the residents were inclined to engage with us as if it were a formal interview process. In general community members anticipate survey type instruments and formal interview protocols when approached by academics. To get around this expectation, the researchers adapted their methods toward a semi structured interview style. Because we had not created a series of prepared questions to ask, yet the community members appeared to expect just that, we found that these first attempts at informal conversations were somewhat awkward and stunted. Nor did they allow for much mutual bonding between the team members and the community members.

devoted to community resiliency. Research and other activities must be conducted in a manner that complies with the time schedule and needs of the community. The forming of relationships and building of trust are not processes that should be rushed. Participants must be aware that the amount of work required in such a project will often go outside of the parameters of the common workday, and time spent in collaboration will more often than not exceed that which was anticipated.

### **Placing the Vision of the Community First**

Regardless of what UNO or NOAA aim to achieve from the standpoint of applied research, the highest priority will always be placed upon the needs and concerns of the community. While maintaining personal and academic integrity, our aim is to provide community members with information and resources to help them to make ultimate decisions about the future of their community.

### **Reflection**

Ongoing participatory evaluation is critical, and the most significant evaluation measure is the community's willingness to continue to collaborate in the process. The PAR process is one of nearly constant reflection, and we are committed to continual and collaborative evaluation of whatever course the research takes. This is done in order to ensure that best collaborative practices are being followed and that research is consistently asking the questions that are most relevant to the community.

### **Sharing of Research**

We recognize the potential value that our research may have for the community once it is completed. We intend to fully disclose the results of our research, making it available to the community for their use in future endeavors.

To alleviate the awkwardness of those first conversations and in order to gather pertinent information, after much reflection, the team decided to change our methods from attempting to engage in random, casual conversation to semi-structured interviews. This decision was highly beneficial to our research project because not only was the team able to be more transparent about our intentions, but it plainly helped the community members feel more comfortable, as this was what they were anticipating from our presence. The team found that by initiating the conversation using semi-structured interviewing techniques we were eventually able to engage in those casual conversations that we had originally desired.

By having a few prepared questions the team was also able to gather pertinent data from each person with whom we spoke. One obvious downside of casual conversation is that the researchers cannot (nor do we desire to) control the topic of conversation. While this may lead to stronger relationships between the community and the researcher, it does hinder the ability to collect the community's thoughts and opinions about specific topics across the board. By beginning our conversations with a few specific questions we were able to collect the varying opinions about a specific aspect of resilience and therefore compare, contrast, and count the frequency of information we learned through the conversations.

Among the varying groups with whom we were able to engage, there were several factors of resilience that were frequently repeated. These factors became our major themes of the resilience. In addition to the UNO-CHART team--comprised of local graduate students, with intimate knowledge of coastal Louisiana

February 2008	March 2008	April 2008
Team reflects on initial meeting with the mayor and current use of PAR methods.	Team contacts National Park for possible youth group entree.	During the second meeting with M. Kerner, team receives a list of several possible contacts.

and one resident of Jean Lafitte, several outside consultants of multi-disciplinary and international expertise helped in the reflective process, validating and enriching the findings<sup>3</sup>. Some of the outside consultants have had the opportunity to visit the community periodically and many have since stayed in touch via email and phone.

None of the conversations were recorded using audiotapes, however during the conversations one team member was always designated to take notes. All the team members were diligent in writing thorough field notes after we left the field. These notes were typed and copied into an online Wiki PBworks account<sup>4</sup>. This allowed each team member to post their individual notes to be reflected upon and added to by the other team members. This process helped in creating a well-documented account of the conversation. By allowing the team members to make additions and corrections online we were able to compile meticulous descriptions of each conversation. These notes were indispensable for our continuing research in and out of the field.

Because the team adheres to PAR's method of sharing knowledge, the field notes also became one way of returning the knowledge we had gained back to the community. After the field notes had been fleshed out by the entire team, the document was returned to the individual with whom we spoke. The team encouraged these individuals to make any changes or corrections, thereby continually vetting information gathered with the community.

This process had a three-fold effect. First, by returning our notes to the community members we were able to develop more trusting relationships, as we strived to be transparent with our side of the project. Secondly, by returning our notes to community members we may have increased the likelihood that they would reflect on their own knowledge. Thirdly, by encouraging them to make corrections and/or additions we were able to check our observations ensuring that the data was accurate.

Initially, the team collected field notes from forty-eight conversations from individual community members, but soon snowballed as we further engaged with community members. Our largest group represented are aged sixty or older. The second largest represented are middle-aged between twenty and fifty-nine. Individuals younger than twenty made up the smallest group with which the team was able to speak. The team engaged in minimal dialogues from more disparate groups. Therefore, it must be noted that the thoughts and opinions of the predominant population are heavily represented within the findings.

### Partnerships

To reduce the formal power imbalance between the residents of Jean Lafitte and UNO-CHART, it has been our goal to establish several partnerships within the community. To reach this goal, one objective was to maximize community participation through collaboration. Through partnerships UNO-CHART has been

<sup>3</sup> Tony Oliver Smith Bruce Glavovic, Sussanna Hoffman, Fikret Berkes, Derek Armitage, Ben Wisner, Wes Shaw.

<sup>4</sup> PBworks is an online service that allows for the creation, viewing, and editing of textual documents by multiple account members. <http://www.pbworks.com>

May 2008

June 2008

July 2008

Team entree into Jean Lafitte begins in earnest.

Team begins building relationships with members of the Senior Center.

Team begins social mapping of Jean Lafitte community members from field notes.

affiliated with a large portion of the community. While it is self-evident that there are portions of the community that have not been included in ways that we would have preferred, we recognize that research in general is rarely completed in its entirety if at all.

Primarily, UNO-CHART has created partnerships with the town hall, the Jean Lafitte Senior Center and Fisher Middle High School; and collaborating closely the Visitors Center and the Barataria National Park. In addition, UNO-CHART has been in many active dialogues with Nunez Seafood, AlongTheBayou.com, the Piggly Wiggly, Voleo's Seafood Restaurant, Boutte's Bayou Restaurant and the Victoria Inn. It is through these collaborative relationship that our team has collected data to recognize themes of resiliency.

The collaboration has been possible in thanks to Mayor Tim Kerner who invited UNO-CHART to partner with the community in introspective resilience research after two initial visits were completed. UNO-CHART has worked periodically with Mayor Kerner by keeping him updated on the project's progress and findings that have been recognized in our conversations with the residents.

Mayor Kerner is an energetic and enthusiastic individual who exudes a great deal of love and pride for his community. His family has long been connected in the political scene for several generations and is viewed with the utmost respect by his constituents. Most residents refer to Mayor Kerner by his first name (Tim) and are able to contact him through his cell phone if need be. Mayor Kerner, a self-proclaimed hard working man, strongly believes the reason why Jean Lafitte is a resilient town is because of its hard working people.

The Senior Center has been our longest and most promising partnership in the Jean Lafitte community. In addition to providing social activities for the town's seniors the center functions as a conveyer of information and a common area for meetings and other social events that take place in the area of Lafitte.

One such group is the "Breakfast Club". The group of older gentlemen meets on a daily basis to discuss local issues and voluntarily addresses necessary community tasks. UNO-CHART's partnership with the center has probably been the most fruitful in the sense that it has been our "key" into the greater community. Large portions of the seniors have resided in Lafitte their entire lives. Others are a mixture long-time residents or retirees moving/returning to Jean Lafitte. As a result, our team would suggest the seniors of Lafitte personally know or are very well acquainted with a significant percentage of the town's occupants.



Intermittently UNO-CHART has made weekly visits to the center. Not all visits had the aim of gaining hurricane-related information from the center's participants but served as a time for relationship building and to better get to know one another. By having a presence on a regular basis, conversing with the seniors without

August 2008

September 2008

October 2008

Team begins planning the high school Photography Club.

Hurricanes Gustav and Ike flood Jean Lafitte. Team opts to scale back field work.

Team decides to include recent disaster as comparative data for project.

taking notes, it is believed that our team has secured stronger ties and benefited from more open-ended conversations. As our visits continued, rather than researcher initiated conversations, the seniors soon began voluntarily offering stories of their lives that gave us an immensely rich sense of the town's history.

Though not intentional, the team's entree process began with the oldest generation and worked its way down somewhat organically. As the team expanded our reach into the community, we soon made contacts with several business owners. Because most middle- aged community members worked during the day, the team decided to stop in at local business such as salons, restaurants, and grocery stores to get an opportunity to speak with the town's working-aged population.

One particular business became a critical asset to gaining understanding of the town's economic situation. Nunez's seafood dock is more than a business. It is a hub of knowledge, where former and current fishers gather to both work and talk. Most of this conversation includes an abundance of information about the local environmental states of fisheries and estuaries, water currents, seafood hatcheries, and historical comparisons of ecological changes.

Nunez is a seafood (dock) company that buys shrimp and various types of seafood from local fishers and in turn sells it to local restaurants and other buyers in southeast Louisiana. The owner of Nunez Seafood started the seafood business over 50 years ago and has since passed the business down to his son. The son, as in many businesses, was groomed to take over his

father's business. He claims the seafood industry is what he knows best.

With permission granted by the owner, the UNO-CHART team observed the seafood company while it conducted business with fishers and processed shrimp during the beginning stage of white shrimp season in 2009. While we visited we were able to have several conversations and take photographs of local shrimpers and dockworkers.

From this collaborative relationship, UNO-CHART was able to learn more about the fisher's/shrimper's plight concerning the recent trends in the seafood industry in southeast Louisiana. One such trend is that the cost of fuel has gone up as the value of shrimp has decreased. Shrimpers suspect the value of shrimp has gone down because of the increased competition in the shrimp market. Instead of local restaurants buying their shrimp from local businesses in southeast Louisiana, foreign seafood businesses and shrimp farms in neighboring states are offering cheaper frozen shrimp. The rise in fuel cost means more overhead cost and less profit from the catch.

Nunez Seafood remains one of the last seafood buyer/processors in Jean Lafitte. Even though there is concern that the seafood industry is slowly fading away in southeast Louisiana nobody expects it to go completely under. As seasons come and go so do the workers and the fishers. Many of them are "jacks-of-all-trades", being able to migrate from one occupation to another. Even if business is lacking in profit, forcing professional fishers to change job/ industries, does not mean fishing and shrimping has stopped all together. The bayous and their bounty are very much an integral part of Jean Lafitte culture. Fishing still remains a recreation

November 2008	December 2008	January 2009
UNO-CHART holds RIS Fair in Jean Lafitte.	Team begins creation of comparative chart for four hurricane events in Jean Lafitte.	Team discovers AlongtheBayou.com.

and a means of subsistence food for many residents.

Of all groups, the town's youth were the most difficult to reach. With the addition of a new team member and his resourcefulness, the Fisher High School Photography Club was created. This partnership with the school gave us a method of entrée into the town's youth in order to reach their stories, thoughts, and opinions on how the area handles disaster situations.

In November of 2008, the UNO-CHART team requested the opportunity to start a photography club at the only high school in Jean Lafitte. The photography club was originally not in the cooperative agreement between the town of Jean Lafitte, NOAA and UNO-CHART; rather it was an improvised effort to collaborate with the youth of Jean Lafitte. Our team had previously participated in one conversation with a varied-age group of Fisher Middle High School students. However, the "conversation" was structured more like an interview leaving little if any room for collaboration between the two parties. While the conversation did lead to the recognition of valuable data, it left the team with a larger question at hand: how to collaborate with the youth in a meaningful way that avoids their exploitation?

In light of this challenge the team used Photovoice (Wang, 1999) to engage youth groups in organized research. Honing in on many facets of research such as entry into particular groups, building trust and being mindful of the local knowledge is conducive to better research and building stronger bonds between the research subject (the community)

and the researchers (the institutions conducting research).

Photovoice was used in order to get the Fisher Middle High School students actively engaged in our project. Photovoice was developed by Carolyn Wang (1999) using three elements: community-generated photographs, eliciting narratives and participant voice, and working with community participants to reach a wider audience in order to address their concerns. Through the use of Photovoice, participants can begin to see the world through the lens of various community members. Through the photographs that are taken by community members, participants can begin to understand what is important to community members and discuss issues that may come to the surface. Photovoice can be used in order to raise awareness and communication among the community and policymakers and representatives.



The principal purpose of the photography club has been to genuinely collaborate with the youth in a meaningful way, thus further giving them better representation in our collaborative efforts. In return, the students would photograph their community, as they desired.

March 2009

May 2009

June 2009

Creation of Shutterfly account for sharing of Photovoice data

Mrs. Alberta takes team and visitors on guided tour of Jean Lafitte.

Team members attend NOAA meeting in Charleston, NC.

Our intentions were to use the photographs as a basis for reflexive conversation that could lead to themes of community resilience, cultural identity and important observations made by the youth, which could then be compared and juxtaposed to other emerging themes of resiliency deduced by other participants.

### **Community Reception**

Nearing the end of the data collection process the team organized a community reception and shrimp boil, August 3 of 2008 to both share what we had learned and show our appreciation for the time and information the community shared. Timing was important due to the hurricane season. Because of this the team asked the community to choose the best time for them. After collaboratively agreeing on an appropriate time and place, much of the actual organization of the event was done by various community members.

Although NOAA provided funding for the food and materials, it was the community members that really organized the event. Town hall took care of providing workers to gather and boil the shrimp. The Senior Center took care of all the other necessary materials such as plates, napkins, beverages, and the site. The team made sure to advertise to the entire community and to make sure as many people were aware of it as possible. To do so, flyers were created and posted throughout the community. An event notice was placed on the AlongtheBayou.com website and the boil was advertised on the town's central government marquee.

Seven community members were invited to be the guest speakers at the meeting to share some of their stories with others. These stories affirmed the resilient themes that emerged

during this research process. It was important that the main speakers be community members and not "academics" because the aim was to create a space for which the community members could speak authoritatively on their view of the area's resilient indicators and further reflect on obstacles. Following PAR methods and principles the choice of speakers as made so as not to extract and retain knowledge gained at the expense of the community. The main goal behind hosting the reception was to have a forum during which the research team could share findings, vet them with the community and encourage reflection from a larger portion of the community members.

At the shrimp boil, the students in the photography club were able to display the pictures that they had taken. Through this display the students were able to express not only how they think about Jean Lafitte and its' community members but also how the hurricane season of 2005 and 2008 affected their lives as well as their families' lives.

Sixty community members attended the boil, but many others participated in other organizational manners. Civic groups and clubs from the community were invited to attend and bring any displays or pertinent information. Community members even brought personal historical documents to share with each other.

### **The Cross Coastal Resiliency Forum**

The Cross Coastal Resiliency Forum (CCRF) was held on November 12, 2009 in Village de l'Est, east of the city of New Orleans. The Forum was organized in an effort to bring residents of 15 coastal communities from 6 parishes together to discuss issues facing the



July 2009

Team submits rough draft of findings to academic collaborators for review.

August 2009

Team organizes community shrimp boil to vet research findings.

November 2009

Team hosts Cross Coastal Resiliency Forum.

coastal region of southeast Louisiana. The process of organizing this Forum included providing transportation and a meal for those attending. Size of the group was limited by both transportation and size of room. Students from a Masters of Public Administration course helped with the note taking and group facilitation. The Mary Queen of Vietnam CDC-VAYLA-NO also helped with many organizational needs. The conversations from the evening as well as the pictures were disseminated back to the communities within a two-week time period.



The main speakers at the event were all community members. This was done intentionally to further empower community members by recognizing them as experts of their area. The other 14 communities were invited to hear the findings from the Jean Lafitte area and share similar issues. This was a collaborative effort to highlight the findings of the previous research and discuss the vulnerabilities of the coastal communities by encouraging those most affected to participate in the process.

The conversations at the CCRF from the other participants affirmed that coastal communities are resilient because the citizens in these communities care for each other. Members of

these communities have strong family and community backgrounds. They take responsibility for themselves and their families, but also extend help to others in the community without hesitation. They have the technical skills and know-how to repair their homes and boats which makes them a very independent group of people.

Despite such innate resilience, the coastal communities continue to face extraordinary challenges to their lives and livelihoods. The most common concern discussed at the CCRF was the issue of coastal erosion. The deterioration of the wetlands profoundly affects not only the day-to-day lives of those who live here, but also the overall sustainability of these communities as many individuals rely on the wetlands as their primary source of economic income. The communities, citizens' livelihoods, cultures, traditions, local knowledge, as well as a shared sense of history and place continue to be threatened as the land subsides.

The communities are frustrated with the lack of government response to such a large scale destruction of the Louisiana coast. They know that restoring the coast is an enormous undertaking and that help from the state and federal government is absolutely necessary for a successful plan. Coastal restoration projects have been isolated and often limited in their effectiveness. The Louisiana coastal communities want the government to prioritize the urgency of the wetlands and provide the needed resources to address the restoration collaboratively with the communities. Such collaboration would result in an integrated approach to coastal restoration projects.

## Implications for Future Research

Coastal areas such as Southeast Louisiana present a research challenge due to the dynamic continual change in the socio-ecological construct of community exacerbated by disasters. This research argues to support creative ventures that address coastal community's adaptation of their resilience especially through community engagement tools such as PAR. Cultural adaptation will occur as the physical elements of the coast deteriorate. This adaptation can be a positive or negative dynamic engendering either a more resilient community or a corrosive one. (Kroll-Smith and Couch, 1990; Picou, Marshall and Gill, 2004; Browne, 2006) Corrosiveness neither benefits any component to the strengthening of the socio-ecological complexity nor will it assist in the resiliency tools needed when dislocation occurs. Theories of resilience should be reconsidered and monitored in settings that lend themselves to technological occurrences so that methods of resilient adaptation might instead replace expected corrosive outcomes. Such study and application could be beneficial to both the environment and communities.

There is little disaster literature regarding the social dynamics within and between communities experiencing both natural and technological disasters. Additional research is needed to follow the complexity of a dual set of accumulative disasters, natural and technological and their long-term consequences on the socio-ecological resiliency of a community. The resiliency of the coastal communities may be challenged by the long-term issues resulting from the BP Deepwater Horizon oil disaster that took place after the major part of the data was collected. The corrosive community literature indicates that inequality of the distribution of post-event resources causes some of the social friction. For example, could the methods used by the

mayor of Jean Lafitte to level those inequality of differences, such as the distribution of appliances or other material resources after the storms etc. be a critical factor in resilience? In the BP oil spill case, the mayor pushed for all unemployed fishers to have a chance to be part of the "Vessels of Opportunity" program in an effort to balance the distribution of work and supplemental income.

The importance of 'habitus of place' and the appreciation of the place as 'commons' needs further consideration and study. The inter-relatedness of people and place as a "oneness-of-being" (Heidegger, 1971) is prevalent in most of the conversations with people of every walk of life in the Barataria region. The same connectedness is also voice in other coastal and bayou communities. This is not just an attachment to place but an understanding of place as being part of being. It is part of the soul of the people (Tuan, 1974). When people from neighboring bayous have visited in other bayous that are similar to their own, they are keenly aware of the similarities as well as the differences. The person's habitus is contextual as is their traditional knowledge. For an outsider, a bayou dwelling may look or feel the same but there are significant differences as well as areas of generalization which need to be heeded in all data/program application. For example the understanding of place, livelihood and home and their implications for dislocation and social-cultural integrity are critical in any decisions made that alter the coast.

The connection of home and habitus is strongly linked to 'commons'. The understanding of 'commons' that goes beyond ecological management issues of 'common pool resources' (extraction) is important to explore further as part of the resilience and stabilization of areas especially vulnerable. Because ecological services are seen as part of

common pool resources the co-management of those resources must be established in a more just and equitable and scientific way that assures the continuation of the natural resource. But beyond just a natural resource such as shrimp or carbon sinks or estuaries there is an understanding that might evolve that environmental places of importance are important just for their being- and for no other reasons than that. This change of importance of being either for the community or the surrounding environment starts shifting the focus away from economic values or evaluation and in so doing allows for the appreciation of the community's people, culture and place. The project team has seen strong evidence of this type of appreciation of commons that might be part of the striving of the community to be as resilient as possible first as place-community without the framework of cost-value-worth. This connection of place, community and commons embraces the old Greek concept of economics as meaning the functions, and the fullness thereof, of home/place.

The following are questions that have emerged from our time with the Jean Lafitte community and this project. They are certainly areas that can be used as future exploration or longitudinal studies on resilience.

### **Bridging Research:**

- Post disaster communities are sometimes plagued by multiple research teams that are collecting data from various sectors of the community. The teams gathering information or data might be non-profits, governmental, academic or professional consultants. The data gathered are not always shared between outside actors or the community members and is at the expense of the community's time and resources.

- Is it possible for small communities to learn to 'bridge' and manage the data collection so that they take control so that their time and resources can be used most effectively and efficiently while in a recovery and redevelopment mode?

### **Leadership and resilience:**

- Is the organic collaboration of the community related to dynamic leadership?
- Is long-term resilience affected by changes in a particular leader or leadership type?
- What is the relationship between engaged citizens that contribute to the social and political democracy of a region and leadership?

### **Skill sets:**

- We find that many of the positive factors that aid in resilience are contextual. Our research has found that the existence of these skills is bound to the place in which they are utilized.
- What are transferable skill sets for adaptation?
- What other (techie multi-skill sets work just as well?) multi skill set groups would also lend themselves to resilience?

### **Commons:**

- Does working towards a resilient community with common pool resources strengthen ties between cultures and lessen racial boundaries?

- What are the common pool resources that can be managed for mutual support of restoration projects and livelihood concerns?
- What is the perception of the commons in a geographic location that people are committed to saving?

### **Investment in youth:**

- What is the investment in youth in areas that are resilient?
- A quicker involvement with the youth of the area through projects like Photo Voice would have been helpful.
- How is the commitment of the community to their youth part of the nurturing of the indicators that brought about resilience such as the community's own Head Start Program, their own local public school, a library that caters to youth and 40 college scholarships given by the community to the 2009 high school graduating class?

### **Knowledge production:**

- Further exploration is needed that will help understand how 'resilience' knowledge is being produced and relayed within the community.
- How is academic knowledge, special interest knowledge and agency knowledge used in the community for making decisions?

### **Gender and Race concerns:**

- Gender roles in literature and in reality do not necessarily perfectly align. Third world – non western epistemology fits more with what was seen in Jean Lafitte than literature from the United States.
- How does gender play a role in disaster recovery?
- Issues of race are still undetermined. There was not a large enough sampling to understand the dynamics of community racial considerations in resilience.
- Are communities integrated through-out the culture of the community – if not are there separate communities of resilience – or competing?

### **Adaptability to other locations:**

- Decide upon the necessary framework and scale of generalization that can be taken from the report.
- Can this kind of social resilience be found among other communities?
- Are these resilience factors equally salient across varying locales?

## Post Script

The initial funding for this NOAA supported research project had to be extended twice, once due to the occurrence of hurricanes Gustav and Ike and the second due to the oil disaster, BP Deep Water Horizon. All three of these events had dire consequences for the Barataria area.

Due to those delays the community and the team were able to observe how the tools of resilience honed by the community were applied to each subsequent event. The resiliency tools which were mentioned in the findings were not only utilized but became exemplar in the communities' desire to fully confront the ecological disaster facing them with the incoming oil and the secondary gas well head explosion in June just a few miles south of the communities.

Through the PAR process relationships and most importantly trust was built between the academic team and the community. This trust has resulted in the inclusion of the team for reflection, opinions and academic science/tools and resources on a variety of risk issues facing the area.

This foundation has contributed to and help shape the following:

### •Levees

The concern of the environmental effects of a major Corps of Engineers levee project, Donaldsonville to the Gulf, on the Barataria region had important negotiated outcomes for the area. The Mayor, environmental groups, and other stakeholders were able to consider a ring levee for the area. This adheres to the 'multiple lines of defense' approach to community safety-use multiple methods of flood mitigation together rather than a single approach that may be extremely challenging to the environment

### •Land use planning.

The state has engaged a group to help assist communities in resiliency land use planning that will help in job creation/retention as well as be mindful of coastal sustainability issues. The UNO-CHART team will be part of this process with Jean Lafitte to help the community integrate previous work (NOAA) with their planning for a future more resilient community.

### •Mitigation Planning

The recent work with the NOAA project and the initiation of work with the Land Use project lend themselves to the community doing a self-implemented mitigation plan, a project under consideration. By doing the plan themselves, the community will know better what is in the plan thus making their development decisions reflect their mitigation goals. It will also give the community status with the FEMA in negotiating various pre-and post-disaster funding.

### •Fishers Processing Cooperative

A proposal is pending to help create a fishers cooperative processing plant for the region. Due to the destruction of many of the refrigeration plants and docks, the fishers are limited to where their catch can be taken for sale. By having a cooperative (which did exist in the early 1900's) the fishers will not only have a say in the processing locales but also benefit in the 'dock' pricing system.

### •Library as a Center of Resilience

A proposal is being developed to target the library as a location for bringing to the community extended learning, on line services, job training, webinars and other such services

not yet defined or explored. The Library can serve as the core for information regarding all the fore-mentioned activities, not only in space and meeting place but in intellectual resources.

- Alaska collaboration and Oil Spill

The Deepwater Horizon effected the Barataria region in multiple ways. It became a staging site for BP response operations as well as a distribution site for needed clean-up resources. Through a relationship established shortly after the spill through conference calls and visits to and from Alaskans (Prince William Sound Regional Citizen Action Committee), peer mentoring and tutoring took place that was helpful in supporting the community taking control of their role in response and clean up. This effort to be pro-active was so that the least amount of harm possible under the circumstances would take place both for the community members and the surrounding environment-fisheries and marshes. Members from the community including the Mayor and the Parish Council representative traveled to Alaska to witness first hand the methods used for oil safety and clean up. Some of the gained knowledge was employed in the region by the community. It has sparked the interest in community members to support citizen participation in the monitoring and protection from oil production accidents the waters and the people who work on them.

- Diversion and Restoration projects

The community fishers will become part of a project that a team of physical and social scientists from UNO-CHART is conducting in the Barataria Basin regarding wetland restoration projects and fishers' adaptation to them. Through a PAR process with the various stakeholders, the team will help discern where and how to implement restoration projects that not only help in restoration of marsh but also

the estuaries that the communities are reliant on for their fishing needs. The project with the goal of refining and disseminating a restoration support 'tool' is a blending of Traditional Ecological Knowledge (T.E.K.) and science and is called SCI-T.E.K. Collaborative Mapping.

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