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Research article

Concerns from a Large-Scale Disaster: The Experience: Hurricane Rita

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Abstract

On September 24, 2005 Hurricane Rita made landfall in Southeast Texas. The vast majority of Southeast Texans had evacuated the region before landfall. The following paper presents the results of two surveys conducted after the hurricane focusing on the impact that the storm had on the region. The first survey was a survey administered to citizens of Jefferson County to examine the evacuation and recovery of the citizens. The second survey was a survey administered to city leaders to measure overall preparedness to deal with natural disasters, including hurricanes. The results of the surveys provide the foundation for the comparison of mass and elite experiences during times of natural disaster.

Keywords: Natural Disaster, Jefferson County, Elite Experience, Local leadership, Hurricane Rita, Evacuation and Public Policy

Introduction

On September 24, 2005, Southeast Texas was hit by the fourth most powerful storm on record in the Atlantic region, Hurricane Rita (James Wilson, A Hurricane Names Retired from 2005 Season, *@ The Weather Channel*, 4/6/06). Rita entered the Gulf of Mexico on Tuesday, September 20, where she quickly grew to a category five storm, with winds sustaining 175 miles per hour (Brian Dunbar, *NASA*, 2/25/06). Evacuation was recommended in Jefferson County on Wednesday, September 21, and then elevated to mandatory the following day, Thursday, September 22.

Rita made landfall at 2:38 am, Saturday, September 24, hitting northeast of Sabine Pass and heading toward Jasper, Texas. Upon landfall, Rita was a powerful category 3 hurricane with winds sustaining 120 miles per hour (Beth Gallaspy, A Brutal Blow, *@ Beaumont Enterprise*, 9/24/05). Rita caused as much as 10 billion dollars in total damage along the entire Gulf Coast (this includes estimated insured and uninsured losses) (Richard Knabb, Daniel Brown and Jamie Rhome, A Tropical Cyclone Report: Hurricane Rita, *@ National Hurricane Center*, 3/17/05), and up to 85 million dollars of damage in Jefferson County (Beth Gallaspy, A Officials Seek Help with Rita's Price Tag, *@ Beaumont Enterprise*, 11/1/05).

In addition to property damage, Jefferson County experienced population loss. The city of Port Arthur, for example, may have lost nearly 10 percent of its population as a result of the storm. County-wide, there were numerous business losses, and it might be years before business activity returns to its pre-Rita level. The Cost@ in terms of human suffering cannot easily be measured. While quite real, Rita's emotional and psychological impact likely cannot easily be gauged at this point.

In the wake of Hurricane Rita, it was not uncommon to hear complaints from local leaders regarding the unwillingness of many citizens to evacuate in a timely manner, or once a mandatory evacuation was called for, the unwillingness of some citizens to wait for the officially designated hour before leaving home. Massive traffic congestion during the evacuation has been blamed, at least in part, on this asserted lack of citizens' willingness to heed warnings and follow directions. Conversely, it was not uncommon to hear citizens complain about the lack of a clearly articulated evacuation procedure as well as lack of sufficient shelters, and the general chaotic situation that resulted.

The perceptual vantage-point of those who hold formal leadership positions differs from that of the rank-in-file citizenry. Those who occupy formal leadership positions, by virtue of the job duties encompassed by their position, are relatively more concerned with the aggregate, i.e. the community overall. Rank-in-file citizens are comparatively more focused on individual, self-specific concerns. These distinct vantage-points are reflected in distinct concerns as well as distinct preferences for government responses to a given emergency situation.

Our paper will, first, investigate mass and elite concerns that resulted from a major natural disaster B Hurricane Rita. Second, our paper will investigate differences in emergency preparedness concerns between types of local leaders.

Data

To investigate differences in mass and elite concerns, our paper draws from three sources of information. To gauge the concerns of citizens, we employ the results of a random phone survey of registered voters in Jefferson County, Texas, conducted during February and March, 2006. This survey asked citizens a series of questions related to two broad areas: their experiences during the evacuation from Hurricane Rita, and their experiences during the hurricane recovery process. Citizens were asked whether they evacuated, how far they traveled, how long they were away from home and where they stayed, their major source of information when they were away, the level of storm-related damage to their house or property, the sources of assistance during recovery, and their biggest concerns during both evacuation and recovery.

To gauge the concerns of those who occupy formal local leadership positions we employ results of two mail-out surveys of city leaders in Texas. The first was a survey of city managers, mayors and city council members in Texas, conducted during November and December, 2005. The second was a survey of Chamber of Commerce presidents and Economic Development Corporation (EDC) directors in Texas cities, conducted during March and April, 2006. These two mail-out surveys queried these city leaders regarding their opinions on their city's level of emergency preparedness. Local leaders were asked whether their city was prepared to handle a large-scale natural disaster, such as Hurricane Rita, what their city needed in order to improve its' level of emergency preparedness, what level of government should take the lead in responding to a large-scale disaster and, if evacuees were at some point sheltered in their community, in what kind of facility where they sheltered.

As noted above, our paper will investigate differences among types of city leaders regarding attitudes on emergency preparedness. Surveyed leaders reflect a range of formal city leadership positions -- from the most purely political, elected public position (i.e., city council member), to positions that entail greater administrative responsibility (i.e., elected mayor and appointed city manager), to what can be considered a quasi-public position (i.e., economic development corporation director), to private-sector leaders (i.e., chamber of commerce presidents). Different formal local leadership positions can be associated with differences in training and education (for example, city managers are attained, @ professional administrators while city council members generally are not). The Environmental influences@ encountered by each type of position-holder can also differ (for instance, an elected city council member whose role it is to represent a local constituency likely will be more attuned to public sentiment relative to an appointed city manager who plays an administrative role). Systematic differences between these

various types of city leaders, accordingly, may produce differences in outlook and perspective regarding levels of emergency preparedness. In the context of our experience with Hurricane Rita, our goal in this paper is to provide some insight into the emergency preparedness concerns of city leaders B those who are Aon the ground@ when disaster strikes.

Survey results are discussed below and reported in the following tables. Question wording is in italics at the top of each table. Column percentages in a table may not add to 100 due to rounding.

Findings

Mass Concerns Regarding the Hurricane Rita Experience – Evacuation and Recovery

Overwhelmingly, Jefferson County citizens evacuated prior to Hurricane Rita. When they did so, their biggest concerns were about possible damage to their home and property, the evacuation procedure itself, and the safety of family members. When they evacuated, most traveled at least 300 miles and stayed with relatives. More than any other source of information, when they evacuated citizens relied on television.

In response to the question, "*Did you evacuate or did you stay?"* Jefferson County citizens overwhelmingly reported having evacuated (96% said that they evacuated). Only 3% said that they stayed, and 1% reported being out of the region when our area was struck by the storm (N'353 for this question). The high percentage of people that chose to evacuate points to a very high level of compliance with the evacuation order which should provide confidence to political leaders that the people are willing to follow instructions during times of disaster, although the high percentage of citizens evacuating might be attributed to extenuating circumstances. The first issue was the close proximity to Hurricane Katrina. Hurricane Rita was only a month after Hurricane Katrina and people had been inundated with the destructive power of hurricanes. This may have scared many into evacuating that would have stayed in other years. The other issue was the intensity of the storm. Hurricane Rita was a category five hurricane on the Saffir-Simpson scale which may have also encouraged people to evacuate.

If we compare the percentage of citizens evacuating during Hurricane Rita with the percentage of people evacuating during the last evacuation of Southeast Texas, the 2002 Hurricane Lili evacuation, there is a striking difference. Hurricane Lili, like Hurricane Rita, was an intense storm reaching category four status on the Saffir-Simpson scale. County officials issued a voluntary evacuation of Jefferson and Orange County. According to a study commissioned by Federal Emergency Management Agency (FEMA) in 2003 entitled "Hurricane Lili Post Storm Assessment,"[1] only 40% of Southeast Texans reported that they followed the voluntary evacuation issued by county leaders. Of those that did not evacuate 59% stated that they would have evacuated had they believed Hurricane Lili was going to hit them directly. Of those that did not evacuate during Lili 54% cited that they did not feel a threat to the safety of their home as their reason for staying. The major difference in the number of evacuees indicate that either the strength of Rita or the images from Katrina likely impacted the decisions of many Southeast Texans and convinced them that there was a major threat to their safety. In addition to whether they evacuated, respondents were asked to specify their biggest concern during their evacuation from Hurricane Rita. This was an open-ended survey question, and therefore provided respondents the opportunity to Speak their mind.@ Slightly more than one-out-of-three respondents (36%) reported possible damage to their home and property as their biggest concern (that included general comments about house and property, as well as specific comments such as potential wind, water or tree damage). Another area of major concern was the evacuation process itself (that included issues such as traffic conditions and travel time, getting to a destination, and the availability of gas) which was mentioned by almost one third of respondents (29%). These concerns provide an important lesson to political elites. We saw a very high level of compliance with the evacuation order, but people seemed unhappy with the actual process of evacuating. This dissatisfaction points to a need to better coordinate the evacuation and strategically position fuel supply in future evacuations. The final major area of concern was safety (for one's self, family and friends), of biggest concern to one-out-of-five respondents (20%). A number of other issues were also of concern to some residents. Concerns about the impact of evacuation on the future health of family members, the fear that there would be nothing left to

1 http://chps.sam.usace.army.mil/USHESdata/Assessments/Lili_Isadore/lili_start_frame.htm

return to, issues about evacuation preparation, obtaining information, and specific references to the weather each received three percent or less of responses (Table 1).

Table 1: *What was your biggest concern during the hurricane?*

Damage to house/property	36%
Evacuation process	29
Safety of self/family	20
Nothing remaining when return	3
Medical/health problems	2
Everything of concern	1
Other	7
No concerns	2
(N'350)	

Jefferson County citizens who evacuated because of Hurricane Rita were also asked questions about how far they traveled, where they stayed when they evacuated, and where they received most of their information. Citizens who evacuated stayed away from home for about two-to-three weeks. Nearly one-in-five stayed away for about one week (19%), more than two-out-of-five were away for about two weeks (42%), more than one-in-four were away for about three weeks (28%), and one-in-ten reported being away from home for more than three weeks (Table 2).

Table 2: *For how long were you away from home?*

1 week or less	19%
2 weeks	42
3 weeks	28
More than 3 weeks	10
Don't know	3
(N'337)	

When citizens evacuated, they tended to travel at least 300 miles. Half of those who evacuated reported traveling up to 300 miles from home, while about one-out-of-three reported traveling over 300 miles (32%). Relatively few citizens traveled less than 100 miles (1% traveled less than 50 miles and 15% traveled 50 to 100 miles) (Table 3).

Table 3: *When you evacuated, about how far did you travel?*

50 miles or less	1%
Up to 100 miles	15
Up to 300 miles	50
More than 300 miles	32
Don't know	2
(N'338)	

The majority of those who evacuated stayed with relatives (57%), though a sizable percentage stayed in a motel or with friends (18% and 12% respectively). Smaller percentages reported having stayed in a shelter or in their second home, such as a lake house (5% each). Having stayed in places such as with a pastor or church, or in a motor home or travel trailer, or in a parking lot during evacuation each received one percent or less of responses (Table 4). The findings of our survey actually indicate that people were better prepared for Rita than Lili in terms of finding accommodations outside of the evacuation area. Only 5% identified using a public shelter versus 9 percent during

the Lili evacuation[2]. This is very surprising considering that many more people evacuated during Rita than during Lili.

Table 4: *For most of the time that you evacuated, where did you mostly stay?*

Relatives	57%
Motel	18
Friends	12
Second home	5
Shelter	5
Other	4
(N'330)	

While those who evacuated relied on numerous sources of information, television topped the list as the major news source. Slightly more than two-out-of-five relied on television as their major news source (41%). A substantial percentage also relied on radio -- more than one-in-five (23%). Nearly one-fifth said that they relied on friends and family (19%), and more than one-in-ten relied on the internet (13%). Numerous other sources of information were also used, but less frequently. Police departments, local business establishments, and talking to people at a shelter each garnered one percent or less of responses. About one percent of respondents claimed to have received no information from any source during their evacuation (Table 5).

Table 5: *While you were evacuated, from where did you mostly get your information about what was going on back in your community?*

Television	41%
Radio	23
Friends & family	19
Internet	13
Other	3
No source of information	1
(N'333)	

The main information source for citizens varied, however, depending upon how far they traveled and their age. Radio decreased markedly as a main source of information the further citizens traveled from home. For those who traveled up to 100 miles, radio was the most frequently relied on information source (43%). By contrast, less than one-in-ten of those who traveled more than 300 miles relied on radio (8%). Reliance on television increased dramatically as the distance traveled from home increased. While about one in three who traveled up to 100 miles relied on television (30%), half of those who traveled more than 300 miles relied on television as their main source of information. The internet as well as family and friends also increased as main sources of information the further that people traveled from home (Table 6).

Table 6: The Main Source of Information by Distance Traveled

	To 100 miles	to 300 miles	over 300 miles
Television	30%	39%	50%
Radio	43	26	8

2 http://chps.sam.usace.army.mil/USHESdata/Assessments/Lili_Isadore/lili_start_frame.htm - Calculations by the authors.

Family & Friends	15	18	23
Internet	7	13	17
(N ‘	54	166	104)

Citizens' main source of information varied by age as well as by distance traveled. While television was heavily relied on across-the-board, it was most heavily relied on by older citizens (46% among those aged 65 and above v. 37% among those aged 18 to 34). By contrast, reliance on the internet as the main source of information was particularly pronounced among younger citizens (29% among those aged 18 to 34 v. 7% among those aged 65 and above) (Table 7).

Table 7: Main Source of Information by Age

	18 to 34	35 to 64	65 & above
Television	37%	38%	46%
Radio	14	25	21
Family & friends	14	17	22
Internet	29	15	7
(N ‘	35	157	132)

In addition to the evacuation process, respondents were asked about their experiences during the hurricane recovery process. Citizens were asked an open-ended question about their biggest concern during recovery from Rita. The most frequent response was about repairs to one's home and property (that included general comments about the need to repair/fix damages and the need for more rapid repairs, as well as specific comments such as the need for roof repairs and the need for available contractors and repair people) (25% of surveyed citizens referred to repairs to home and property). Debris that had yet to be picked up (that included general comments about debris along with comments about the need to have debris removed more quickly) as well as Rita's adverse impact on the region's economy (that included comments about businesses closing/lack of businesses opening, price gouging and inflation, and the loss of jobs and workers) were two other major concerns (both of these concerns garnered 15% of responses). The need to provide assistance to those who as a result of the storm were in need (typically spoken of in terms of government assistance and assistance to those most in need, such as the elderly, the displaced, and those without insurance), as well as the general expression that the region needed to recover and/or reestablish normalcy were also of some concern to some citizens (these two concerns garnered 10% of responses and 9% of responses, respectively). A number of other concerns about the recovery process were also expressed. The opinion that services such as electricity and safe drinking water should have been provided more quickly or still needed to be provided, along with problems with insurance companies were offered (7% and 5% respectively). A series of responses that included generalized concern about the future, about safety, about the need for greater individual self reliance, and specifically about medical conditions and schools each received 2% or less of responses. About 5% of respondents said that they either had no concerns regarding the recovery, or were pleased with the pace of recovery thus far (Table 8).

Table 8: *What has been your biggest concern as our region recovers from Hurricane Rita?*

Repairs/home	25%
Debris	15
Economy	15
Assistance	10
Normalcy/recovery	9
Services	7
Insurance	5

Emotional concerns	2
What the future will bring	2
Other	6
No concerns/pleased with progress	4
(N'331)	

Finally, to gauge the influence of people's Hurricane Rita experience on their willingness to evacuate in the future given a similar scenario, respondents were asked the following: *Based on all of your experiences during Hurricane Rita, if we needed again to evacuate because of a major hurricane, would you decide to evacuate, or would you decide to stay, or don't you know for sure at this point?* It is intriguing to note that while 96% of respondents said that they did evacuate, a lower percentage, 85%, said that they would evacuate in the event of a future storm (12% said that they did not know what they would do, and 4% said that they would not evacuate) (N'339 for this question). Based on their experience, a sizable share of those who evacuated for Hurricane Rita were not convinced of the necessity to evacuate in the future if we again confront a Rita-type situation. The increased number of people willing to stay in the future is problematic for elites trying to manage the disaster. Elites must be prepared for a lower compliance rate in the future when formulating policies for future natural disasters.

Elite Concerns about the Hurricane Rita Experience – Emergency Preparedness

Those in local leadership positions have a frame of reference regarding crisis situations that differ from that of the average citizen. In addition to individual concerns as citizens with families, those in local leadership positions adopt a broader perspective, reflecting concern for the well-being of the community at-large (e.g., for the general public), or for some significant segment of the community (e.g., for those without private transportation or for the local business community, etc.). The survey of elites provides a very different view on the hurricane experience. It is important to note that the elite survey included leaders in areas directly affected by hurricanes and leaders in areas indirectly affected by hurricanes. In areas directly affected, leaders needed to be prepared for evacuations and repair of storm damage. In areas indirectly affected, leaders needed to be prepared to house evacuees and provide services to people temporarily residing in their cities.

The first question put to elites was *how prepared is your city to respond to a large-scale natural or man-made disaster?* The results in Table 9 indicate a difference of opinion based on the perspective of the elite. Overall political elites overwhelmingly believed that their cities were either *very prepared* or *somewhat prepared* to respond to a disaster in their community. The majority political elites, the council members, were the most confident in the abilities of the city to handle a disaster with 50% expressing the belief that the city was very prepared to handle a disaster. On the other side, administrators were the least confident with only 35% of city managers expressing a belief that the city was very prepared for a disaster. This is a fifteen percent difference between the political leaders and the people in charge of the administration of the response to the disaster. Economic leaders were also less confident in the level of preparedness than political leaders with 45% of EDC directors and 39% of Chamber of Commerce presidents expressing a belief that their city was very prepared. Chamber presidents were also the only group that had 10% of the respondents feeling their community was not prepared to respond to a disaster.

Table 9: *In your opinion, how prepared is your city to respond to a large-scale natural or man-made disaster?*

	All	Council	Mayor	Manager	EDC Chamber
Very Prepared	43%	50%	45%	35%	45% 39%
Somewhat Prepared	49	45	50	58	42 47
Not Very Prepared	5	2	5	4	3 10

Not Sure 4	3	3	0	2	10
N ‘ 51	232	62	40	48	31

Following up the question on hurricane preparedness of cities was a question on what could be done to improve preparedness. Only 8% of the respondents believed that nothing could be done to improve preparedness. The four most common areas that were identified as needing improvement were funds (20%), personnel (18%), planning (14%) and communication (11%). Once again there was a significant difference between the different types of elites. City managers overwhelmingly answered funds (27% - almost double the next closest category) as the most pressing need. Mayors, EDC directors and Chamber of Commerce presidents all selected the need for more personnel as the most beneficial in improving preparedness. Finally city council members were split between additional funds and increased planning to improve preparedness.

Table 10: *In your opinion, what would be needed to increase your city's level of preparedness to handle a large-scale disaster?*

	All	Council	Mayor	Manager	EDC Chamber
Funds 14%	20%	19%	25%	27%	13%
Personnel 18	18	13	28	11	28
Planning 18	14	19	6	14	13
Communication 9	11	6	14	5	21
Coordination 14	8	11	3	11	3
Government 9	8	8	11	5	8
Assistance 5	4	2	0	14	3
Equipment 0	4	6	6	3	3
Facilities 5	3	2	0	8	0
Other 0	2	4	3	0	0
No Improvement 9	8	11	6	3	10
N ‘ 22	187	53	36	37	39

When asked who should be responsible for responding to disasters local elites strongly supported local and state government (Table 11). Only 16% of respondents believed the federal government should bear the primary responsibility for dealing with disasters. Between city, county and state, every category of elite preferred the city level followed by the state level of government. County government, the type of government that determines evacuations in Texas, got the least support of any level of government. It should be noted that the survey was administered to city political leaders which undoubtedly skews the data. A similar survey of county leaders might

reverse the results listed below.

Table 11: *In your opinion, who should take the lead in responding to a large-scale natural disaster, such as Hurricane Rita?*

	All	Council	Mayor	Manager	EDC Chamber
City	41%	49%	41%	39%	35%
35%					
State	25	15	31	29	31
26					
Federal	16	13	13	16	17
22					
County	11	15	8	6	10
16					
Mixed	7	8	8	10	7
2					
N ‘	229	61	39	49	29
51					

Because of evacuations natural and man-made disaster impact extends well beyond the location of the disasters. Cities must be prepared to deal with a major influx of people on very short notice. The data presented in Table 12 shows that the majority of the sheltering needs of evacuees are being met by non-governmental sources. Fifty-one percent of the respondents identified their cities as only providing non-governmental shelters with another 27% offering a combination of non-governmental and governmental shelters. When only looking at cities that sheltered evacuees (Table 13) those percentages increase to 59% and 32%. These statistics indicate that one of the primary burdens placed on cities outside the immediate disaster area is being largely addressed by private entities and not the governmental elites in this survey.

Table 12: *If Gulf Coast evacuees have been sheltered in your city, have they been sheltered only in non-governmental facilities, such as churches, or only in governmental facilities, or have they been sheltered in both non-governmental and governmental facilities?*

	All	Council	Mayor	Manager	EDC Chamber
Non-governmental	51%	45%	65%	45%	52%
51%					
Mixed	27	27	8	20	38
41					
Governmental	7	11	5	10	3
0					
Not Sure	1	0	0	0	3
4					
None Sheltered	15	16	23	25	3
4					
N ‘	229	62	40	49	29
49					

Table 13: *If Gulf Coast evacuees have been sheltered in your city, have they been sheltered only in non-governmental facilities, such as churches, or only in governmental facilities, or have they been sheltered in both non-governmental and governmental facilities? [Sheltered only]*

	All Chamber	Council	Mayor	Manager	EDC	
Non-governmental	59%	54%	84%	59%	54%	53%
Mixed	32	33	10	27	39	43
Governmental	8	13	6	14	4	0
Not Sure	2	0	0	0	4	4
N ‘	195	52	31	37	28	47

Considering that private non-governmental sources provide the majority of shelters the results of Tables 14 and 15 are not surprising. Overall 72% of the leaders from communities that provided shelter to evacuees believed that their cities had sufficient resources to provide for the sheltering of evacuees. The results were consistent across the different types of elites with administrators’ response rate (70% of mayors and 68% of city managers) only slightly below the overall average of 72%.

Table 14: *If evacuees have been sheltered in your city, has your city had sufficient resources to deal with the situation?*

	All	Council	Mayor	Manager	EDC Chamber	
Sufficient	64%	70%	57%	56%	69%	67%
Insufficient	19	18	22	24	15	16
Not Sure	6	5	3	2	8	10
None Sheltered	11	7	19	18	8	6
N ‘	214	57	37	45	26	49

Table 15: *If evacuees have been sheltered in your city, has your city had sufficient resources to deal with the situation? [Sheltered only]*

	All Chamber	Council	Mayor	Manager	EDC	
Sufficient	72%	75%	70%	68%	75%	72%

Insufficient 17	22	19	27	30	17
Not Sure 11	6	6	3	3	8
N ‘ 46	190	53	30	37	24

Conclusions

When comparing the two surveys we see two different perspectives on natural disasters. The general public was dissatisfied with the evacuation process and the inability to get information. Conversely, elites generally believed that their cities were prepared for dealing with a natural disaster. People most likely evacuated for Hurricane Rita because of the intensity of the storm and because of their reaction to Hurricane Katrina. In the future government officials may not be able to count on the 96% evacuation rate. If leaders are going to continue to have success evacuating citizens from areas threatened by hurricanes, then they are going to have to learn lessons from Rita. Intermediate cities, the cities between the evacuating area and the destination area, are going to have to be more prepared to accommodate people. This will require assistance from the state and coordination of various levels of government. Leaders must also provide people with more information to reassure them during the evacuation process. Southeast Texans performed very well during Hurricane Rita. The citizens heeded the warnings of their leaders and the local leaders provided for the evacuees. Ideally the experience of Hurricane Rita can be used to improve disaster response in the future.

References

[1] (2005). After hurricane Rita - Chaos on the coast and on the hill. The Economist, 377(8446), 32.
[2] Allen, D. (2005, October). Acadian ambulance and air med play huge rules in hurricane rescues and evacuations (terrible storms of 2005). Acadiana Profile, 25(2), 36-38.
[3] Campbell, N. (2006). A reckoning with Rita. Louisiana cultural vistas, 17(1), 24-29. Retrieved from http://www.nxtbook.com/nxtbooks/leh/lcv-spring06/
[4] Carpenter, R. (2006, September). Telling the underground tell of Katrina and Rita. Underground construction, 61(9), 4.
[5] Angers, T. (2005, October). Louisiana gulf coast slammed by two major hurricanes in less than a month (terrible storms of 2005). Acadiana Profile, 25(2), 16-24.
[6] Effects of Rita continue to trickle down. (2005, November 17). Lagniappe, pp. 26-29.
[7] Bradley, V. (2006). Hurricane Rita: Reflections of a generation witnessing disaster. (p. 381). New York: iUniverse.
[8] Chang, J. (2005, October 3). Storm to intensify tightness. Chemical market reporter, 268(11), 4.
[9] Audin, C. (2006). Carbon monoxide poisoning following a natural disaster: a report on hurricane Rita. . Journal of Emergency Nursing: JEN (32).
[10] Chau, A. Y. K. (2007). A tale of two hurricanes: comparing Katrina and Rita through a knowledge management perspective. Journal of the American society for information science and technology, 58, 1518-1528.
[11] Daley, W. (2006). Public health response to hurricanes Katrina and Rita. Retrieved from MMWR: Morbidity & Mortality Weekly Report website: http://www.cde.gov/mmwr/preview/mmwrhtml/mm5509a1.htm
[12] Daniels, R. S. (2007, Fall). Revitalizing emergency management after Katrina. Public manager, 36(3), 16-20.
[13] Evans, D. (2007, September & October). The KatrinaRitaville express tour. Dollars & sense, 272, 8-9.
[14] Fletcher, S. (2005). Oil, gas prices leap on approach of hurricane Rita. The oil and gas journal, 103(36), 27.
[15] Ford, B. (2005, October 3). Extended outages emerge in gulf. Chemical market reporter, 268(11), 5.
[16] Fowler, J. (2005, 3rd Quarter). Assessing the impacts of hurricanes on wildfire. Forests and people, 55(4), 15-16.
[17] Gaskill, M. (2008, August & September). Restoring Louisiana's broken ecosystems. National wildlife, 46(5),

33-37.
[18] Gates, J. (2006). Surviving Rita: Hope amid ruin in southwest Louisiana. (p. 175). Lake Charles, LA: American Press.
[19] Gierach, M. M., & Subrahmanyan, B. (2007). Satellite data analysis of the upper ocean response to hurricanes Katrina and Rita (2005) in the Gulf of Mexico. IEEE Geoscience and remote sensing letters, 4, 132-136.
[20] Dewan, S., & Yardley, W. (2005, September 25). Hurricane slams into Gulf coast, flooding feared. The New York Times, pp. 1,19.
[21] Diamond, T. (2006). The impact of hurricanes Katrina and Rita on three Louisiana academic libraries. Library administration and management, 20, 192-200.
[22] Godoy, L. A. (2007). Performance of storage tanks in oil facilities damaged by hurricanes Katrina and Rita. Journal of performance of constructed facilities, 21, 441-449.
[23] Barras, J. A. (2007). Satellite images and aerial photographs of the effects of hurricanes Katrina and Rita on coastal Louisiana. Retrieved from http://pubs.usgs.gov/ds/2007/281/.
[24] Goins, B. (2007, January 4). Cameron parish costal restoration: Big plans, little funds. Lagniappe, pp. 24-25.
[25] Goins, B. (2005, November 17). Desperately seeking workers: lake area employers struggle with severe post-Rita labor shortage. Lagniappe, pp. 22-25.
[26] Gomez, A. (2006, September 25). A year later, Rita's wrath lingers. USA Today, p. 3A.
[27] Longman, J. (2006, December 12). Winning a Title For Another Town (This One Counts). New York Times. pp. D1-D4.
[28] Louisiana speak, our voice, our plan, our future: Louisiana long-term recovery planning. (p. 32). Baton Rouge, LA: Louisiana Recovery Authority and FEMA.
[29] Griffin, J. (2006, September). Restoring communications. Underground construction. Retrieved from http://www.loildompublishing.com/uceditorialarchive/Sept06/communications.pdf
[30] Labdi, B. A. (2006). Working with hurricane Rita. American Journal Of Health-System Pharmacy, 63(21), 2053-2054.
[31] Lach, H. W., Langan, J. C., & James, D. C. (2005). Disaster planning: Are gerontological nurses prepared. Journal of Gerontological Nursing, 31(11), 21-27.
[32] Guidroz, W. S., Stone, G. W., & Dane, D. (2006). Hurricane Rita, 2005: assessment of a storm-induced geological event along the southwestern Louisiana coast and adjacent interior marsh. Gulf coast association of geological societies transactions, 56, 229-239. Retrieved from http://www.wavcis.csi.lsu.edu/pubs/070.pdf
[33] (2005). Gulf coast braces for oncoming hurricane Rita. Facts on File, 65(3380), 643-645.
[34] (2006). Health concerns associated with mod in water-damaged homes after hurricanes Katrina and Rita--New Orleans area, Louisiana, October 2005. Retrieved from MMWR Morbidity and Mortality Weekly Report website: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5502a6.htm
[35] Houze, R. J. (2007). Hurricane intensity and eyewall replacement. Science, 315(5816), 1235-1239.
[36] McCall, M. (2006, October). Dallas's disaster recovery efforts for hurricanes Katrina and Rita. Public management, 88(9), 16-20.
[37] McNeese State University. Hurricane Rita after-action report committee. toward enhanced hurricane and disaster preparations: Lessons learned and experiences applied. (p. 31). Lake Charles, LA: McNeese State University.
[38] Houze, R. A. (2008, April). Vortical structures accompanying secondary eyewall formation in hurricane Rita (2005). 28th conference on hurricanes and tropical meteorology. doi: http://www.ams.confex.com/ams/28hurricanes/wrfredirect.cg?id=9511
[39] Howard, J. (2007). Stories from the Storm. Chronicle Of Higher Education, 54(3), A10-A11.
[40] (2006). Hurricane Rita rapid response wind water line report. Task order 446. (p. 41). Gaithersburg, MD: URS Group.
[41] (2007). Hurricane Rita recovery plan: City of Lake Charles LRA initiatives. (p. 18). Lake Charles, LA: City of Lake Charles.
[42] (2005). Hurricane Rita strikes Texas and Louisiana coasts. Facts on File, 65(3361), 663-666.
[43] Hurricane Rita: little damage, much disruption. (2005, September 28). Chemical week, 167(32), 8.
[44] Hurricanes Katrina and Rita: lessons learned by doctors and hospitals. (2006). Fire Engineering, 159(9), 44-46.
[45] Jasper, P., & Lindahl, C. (2006). The Houston survivor project: an introduction. Callaloo, 29, 1504-1505.

[46] Javetski, J. (2006). Preparation keyed Entergy's responses to Katrina, Rita. Power, 150(4), 35-38.
[47] Kaiser, J. (2005, September 30). Scientific community. Hurricane Rita spares major research institutions. Science, 309(5744), 2143.
[48] Kalec, W. (2008, January/February). The refuge II: A symbol of hope after hurricane Rita. Acadiana profile, 27(3), 52-55.
[49] Hebert, B. B., & Ballard, M. B. (2007). Children and trauma: A post-Katrina and Rita response.
[50] Goins, B. (2008, June 5). Reporting Rita. Lagniappe, pp. 71-78.Professional School Counseling, 11, 140-144.
[51] Hill, J. (2006, October 5). Recognizing Cameron's plight. Lagniappe, pp. 12-14.
[52] Kutz, G. (2006). Hurricanes Katrina and Rita disaster relief: Continued findings of fraud, waste, and abuse: GAO-07-252T. (p. 27). Washington D.C.: General Accounting Office.
[53] Rowley, K. (2007). A year and a half after Katrina and Rita: an uneven recovery. (p. 73). Albany, NY: Nelson A. Rockefeller Institute of Government.
[54] Rowley, K. (2007). Response, recovery, and the role of the nonprofit community in the two years since Katrina and Rita, October 15, 2007. (p. 52). Albany, NY: Nelson A. Rockefeller Institute of Government.
[55] Kutz, G. (2007). Hurricanes Katrina and Rita disaster relief: Prevention is the key to minimizing fraud, waste, and abuse in recovery efforts: GAO-07-418T. (p. 16). Washington D.C.: General Accounting Office.
[56] Larson, J. (2005). Hurricane Rita - nursing to the roadside. RN, 68(11), 20,22.
[57] Leberg, P. L., et al. (2007). Response of waterbird colonies in southern Louisiana to recent drought and hurricanes. Animal Conservation, 10, 502-508.
[58] LeBoeuf, M. C. (2006). Disasters strike, public libraries prevail: the impact of hurricanes Katrina and Rita on Louisiana public libraries. Louisiana Libraries, 68(4), 3-7.
[59] Levin, A. (2005). Psychiatrist victimized by Rita continues to put patients first. Psychiatric News, 40(20), 5. Retrieved from http://pn.psychiatryonline.org/cgi/content/full/40/20/5-a
[60] Marsalis, W. (2005, Fall). Saving America's soul kitchen (after Katrina and Rita). Louisiana cultural vistas, 16(3), 18-19.
[61] Moore, M. (2006). Massive rebuilding: Small towns still recovering after 2005 hurricanes. On Tap, 5(4), 18-29. Retrieved from http://www.nesc.wvu.edu/ndwc/articles/OT_wo6.pdf
[62] Morss, R. E., Zhang, F., & Sipppel, J. (2008, April). Perceptions of hurricane risk and the response to hurricane Rita forecasts along the Texas coast. 28th conference on hurricanes and tropical meteorology. Retrieved from http://ams.confex.com/ams/28hurricanes/techprogram/paper_138701.htm.
[63] Myers, C. A. (2007). Population change and social vulnerability in the wake of disaster the case of hurricanes Katrina and Rita. (p. 31). Louisiana State University.
[64] Oder, N. (2006). Louisiana Was Hit By Rita, Too. (Cover story). Library Journal, 131(10), 40-41.
[65] Paredes, J. (2006). Introduction to "The Impact of the Hurricanes of 2005 on New Orleans and the Gulf Coast of the United States". American Anthropologist, 108(4), 637-642.
[66] Paths of Destruction. (2005). Time, 166(14), 40-41.
[67] Water, water, all around (terrible storms of 2005). (2005, October). Acadiana profile, 25(2), 30-31.
[68] Waugh, W. (2006). The political costs of failure in the Katrina and Rita disasters. The Annals of the American Academy of Political and Social Science, 604, 10-25.
[69] Weiss, R. I., McKie, K. L., & Goodman, R. A. (2007). The Law and Emergencies: Surveillance for Public Health--Related Legal Issues During Hurricanes Katrina and Rita. American Journal Of Public Health, 97S73-S81.
[70] Pierre, J. (2006). Understanding the Stafford Act: Providing legal assistance to individual victims of hurricanes and natural disasters. Louisiana Bar Journal, 61(9), 70-71. Retrieved from http://www.oildompublishing.com/uceditorialarchive/Sept06/power.pdf
[71] Power Restoration Quick: Despite Double Hurricane Hit. (2006). Underground Construction, 61(9), 70-71. Retrieved from http://www.oildompublishing.com/uceditorialarchive/Sept06/power.pdf
[72] Read, T. (2006). BEAUMONT WATER UTILITY RIDES OUT RITA. (cover story). Underground Construction, 61(9), 64-65.
[73] Riley, W. J. (2007). Hurricanes Katrina and Rita: Professionally fulfilling, personally painful. Journal of Health Care for the Poor and Underserved, 18, 229-232. Retrieved from http://muse.jhu.edu/journals/journal_of_health_care_for_the_poor_and-underserved/v018/18.2riley.pdf
[74] Rita. (2005, October 20). Lagniappe, p. 19.

[75] Rita's wrath strikes wildlife, lands and facilities. (2005, November/December). Louisiana conservationist, pp. 30-31.
[76] Rowley, K. (2006). One year later: First look at the recovery, role, and capacity of states and localities damaged by the 2005 hurricanes. (p. 62). Albany, NY: Nelson A. Rockefeller Institute of Government.
[77] Rozeman, P. A., & Mayeaux Jr., E. J. (2006). Hurricanes Katrina and Rita: Evacuee Healthcare Efforts Remote from Hurricane Affected Areas. Southern Medical Journal, 99(12), 1329-1333.
[78] Shaver, L. (2006). Working Through the Chaos and Confusion. Transmission & Distribution World, 58(9), 34-39.
[79] Shrum, W. (2007, February). Hurricane Stories, from Within. Social Studies of Science (Sage Publications, Ltd.). pp. 97-102. Retrieved from http://www.ndsciencehumanitiespolicy.org/katrina/meetings/march%
[80] Summers, J. (2006). Riding out Rita; Fear and family. Louisiana English Journal, 10, 53-56.
[81] Tootle, D. M. (2007). Disaster recovery in rural communities: A case study of southwest Louisiana. Southern Rural Sociology, 22(2), 6-27. Retrieved from http://www.ag.auburn.edu/auxiliary/srsa/pages/Articles/srs 2007 22 6-27.pdf
[82] United States Congress. House. Committee on Transportation and Infrastructure., (2006). Authority of GSA to make repairs and lease space in response to damages attributable to hurricane Katrina or Rita: report (to accompany H.R. 4125) (109th Congress, 2nd session, House of Representatives). Retrieved from GPO website: http://frwebgate.access.gpo/gov/cgi-bin/getdoc/cgi?dbname=110_senate_hearings&docid=f:hr532.109
[83] United States. Congress. Senate. Committee on Homeland Security and Governmental Affairs., (2007). Hurricanes Katrina and Rita: Outstanding need, slow progress: Hearing before the Committee on Homeland Security and Governmental Affairs, United States Senate, 110th Congress, 1st session, field hearing in New Orleans, Louisiana, January 29, 2007. Retrieved from GPO website: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=110_senate_hearings&docid=f:hr532.109
[84] Vandersteen, C. A. (2005, 4th Qtr.). Handling the hurricanes of 2005 (executive director's column). Forests & People, 55(4), 9.
[85] Working group for post-hurricane planning for the Louisiana coast. (2006). A new framework for planning the future of coastal Louisiana after the hurricanes of 2005.. (p. 48). Cambridge, MD: Integration and Application Network. Retrieved from http://www.umces.edu/la-restore/New framework%final.pdf
[86] Zhang, F. (2007). An in-person survey investigating public perceptions of and responses to hurricane Rita forecasts along the Texas coast. Weather and Forecasting, 22, 1177-1190.