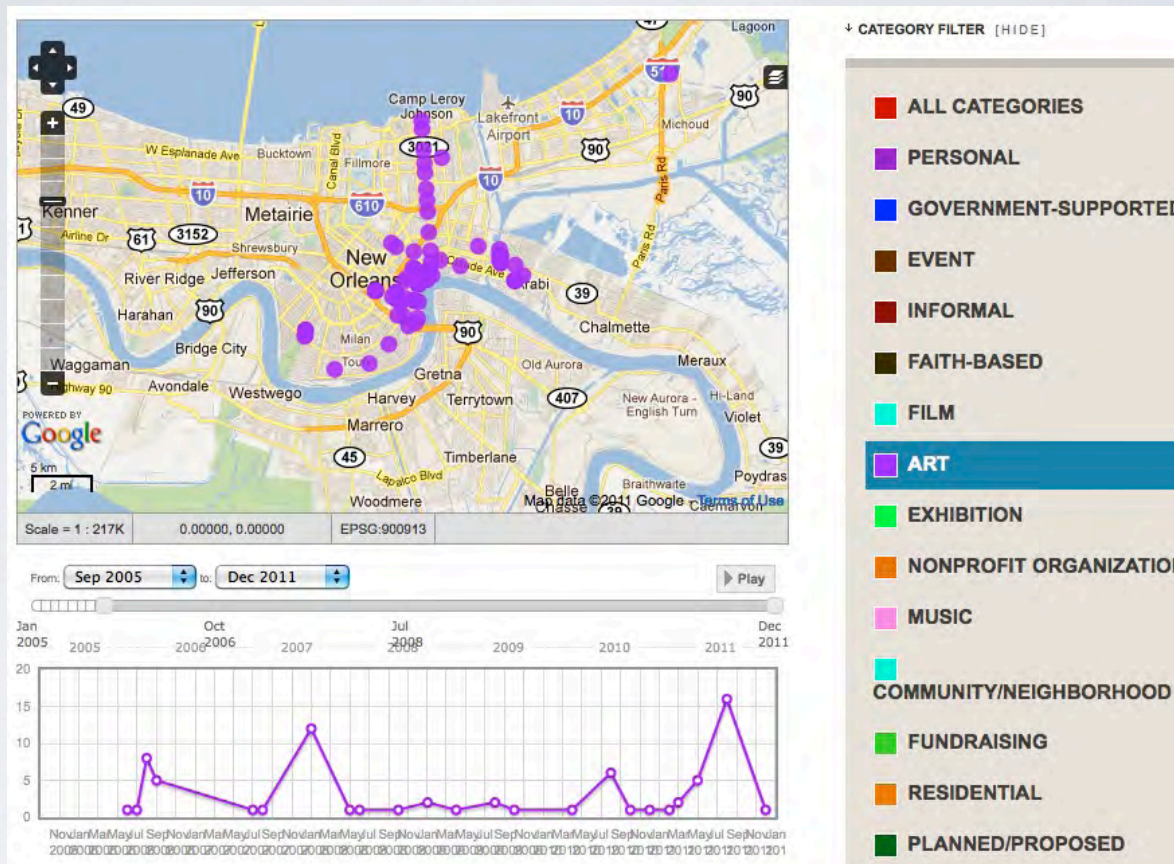


# Landscape of Remembrance: Spatial Distribution of New Orleans Katrina Commemorations



Mike Winiski – Furman University / Penn State University  
 Drew Woten – Furman University

# Perspective

“‘Distant reading’ I have once called this type of approach; where distance is however not an obstacle but *a specific form of knowledge*: fewer elements, hence a sharper sense of their overall interconnection. Shapes, relations, structures. Forms. Models.”

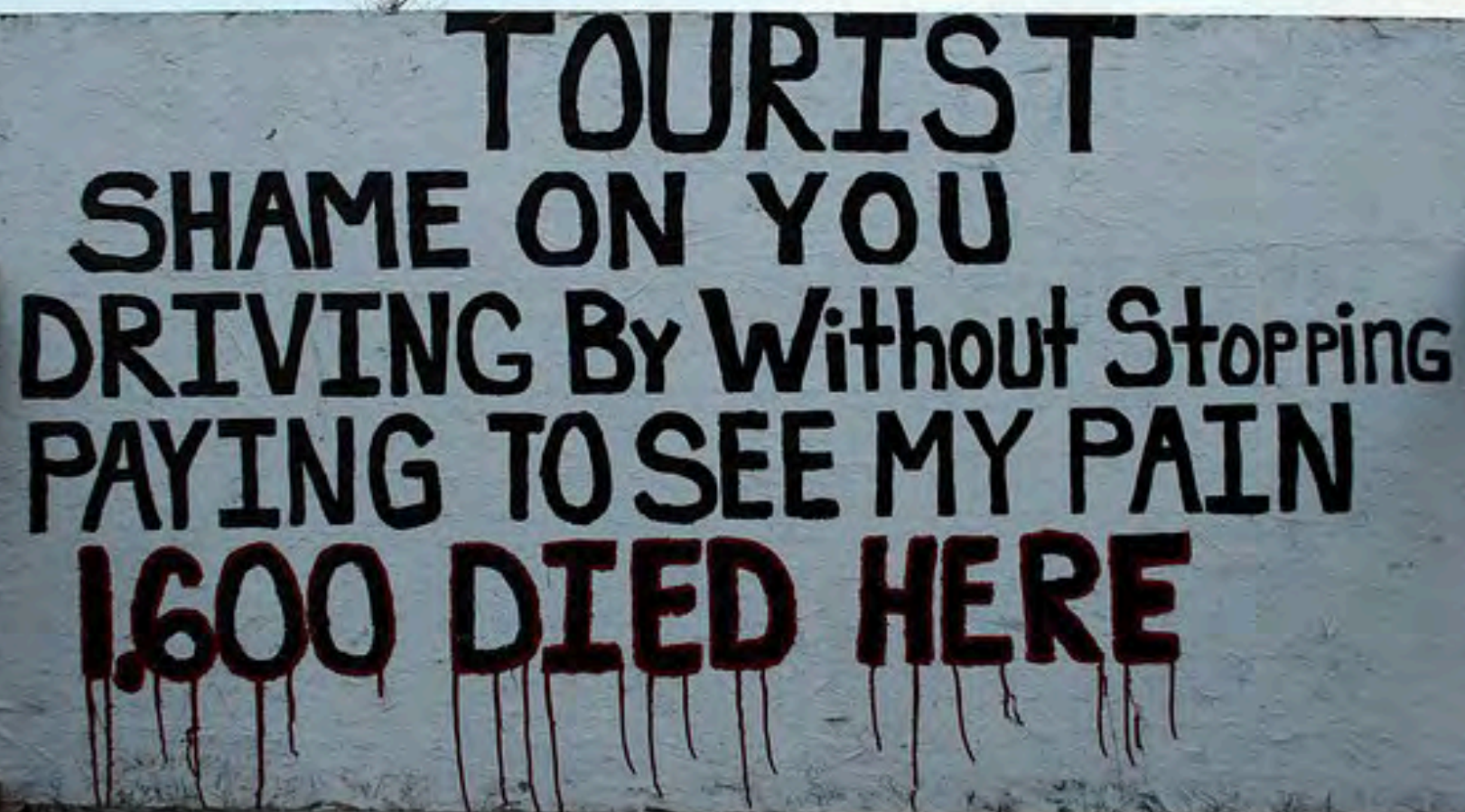
Moretti, 2005, *Graphs, Maps, Trees*

# Research Questions

1. How do the locations and forms of Katrina commemorations in greater New Orleans correspond to storm impact?
2. Are certain contingents, as represented by place and demographics, excluded from the commemoration process?
3. Do the form and nature of these commemorations vary across the city and different neighborhoods? If so, how?







**TOURIST**  
**SHAME ON YOU**  
**DRIVING By Without Stopping**  
**PAYING TO SEE MY PAIN**  
**1.600 DIED HERE**

<http://www.flickr.com/photos/midnightquill/416540958/sizes/z/in/photostream/>

# Defining Commemoration

1. Has a discernible location (temporary or permanent)
2. Visibly invokes a remembrance of Katrina event
3. Invokes memory of event or collective loss, rather than individual memorials (grave markers, etc.)

# Purpose of Commemorations

- Remember
- Grieve
- Honor lost loved ones
- Hold accountable / Ascribe responsibility
- Express anger
- Confirm community through shared experience
- Tell stories
- Express hope
- Promote understanding within and beyond community





[http://photos.nola.com/photogallery/2010/08/hurricane\\_katrina\\_body\\_art\\_15.html](http://photos.nola.com/photogallery/2010/08/hurricane_katrina_body_art_15.html)



<http://www.flickr.com/photos/navillusphotography/3626506521/sizes/z/in/photostream/>



## LONDON AVENUE CANAL FLOODWALL BREACH

On August 29, 2005, tidal surge from Hurricane Katrina exposed design flaws in the London Avenue Canal floodwall, part of the Federal Flood Protection System. The floodwater killed many Gentilly residents and their beloved pets. The breach was one of 50 in the System that occurred that day.

In 2008, the US District Court, Eastern District of Louisiana, placed responsibility for this floodwall's collapse squarely on the US Army Corps of Engineers; however, the agency is protected from financial liability in the Flood Control Act of 1928.

SPONSORED BY LEVEES.ORG

# Exclusion

“Cultural, just as individual memory is an extremely narrow space regulated by rigid principles of selection and forgetting. Those who examined the borderline—Gray speaking for the poor peasants, Woolf speaking for women, Ellison speaking for African Americans—were for the first time calling attention to the structural mechanisms that exclude whole groups of the population from active participation in the cultural memory” (Assmann, 2009, p. 48).



# Data Collection





Hey y'all, check out <http://t.co/pUPVkhX> #katrinamem for Katrina commemorations along w/ our page <http://t.co/egyvxhJ>

From: [www.woz-neworleans](http://www.woz-neworleans.com)



**The Times-Picayune**

# Katrina Commemorations

Gulf Coast

[+ SUBMIT A COMMEMORATION](#)

[HOME](#)

[COMMEMORATIONS](#)

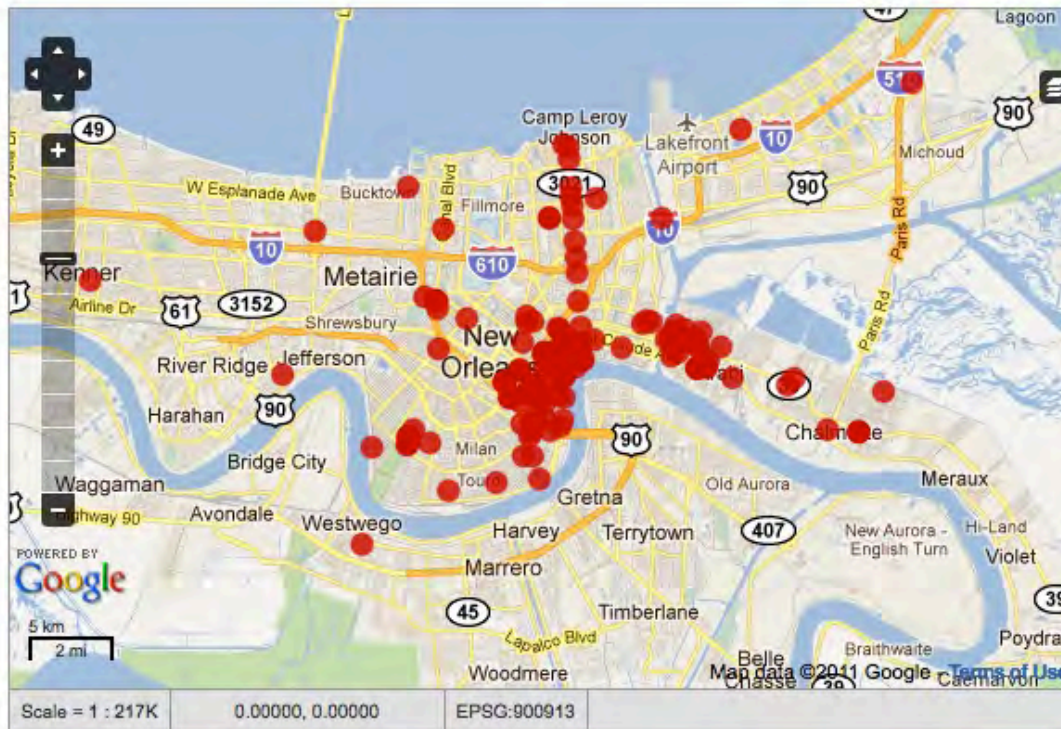
[SUBMIT A COMMEMORATION](#)

[GET ALERTS](#)

[CONTACT US](#)

[FAQ](#)

[FORUMS](#)



From:  to:

[Play](#)

[+ CATEGORY FILTER \[HIDE\]](#)

- ALL CATEGORIES
- PERSONAL
- GOVERNMENT-SUPPORTED
- EVENT
- INFORMAL
- FAITH-BASED
- FILM
- ART
- EXHIBITION
- NONPROFIT ORGANIZATION
- MUSIC

### Lower Ninth Ward Village [ Edit ]

VERIFIED

📍 Lower Ninth Ward 🕒 Aug 1 2007

art community/neighborhood government-supported nonprofit organization

#### Story / Comments

A community center that was formed post Hurricane Katrina.



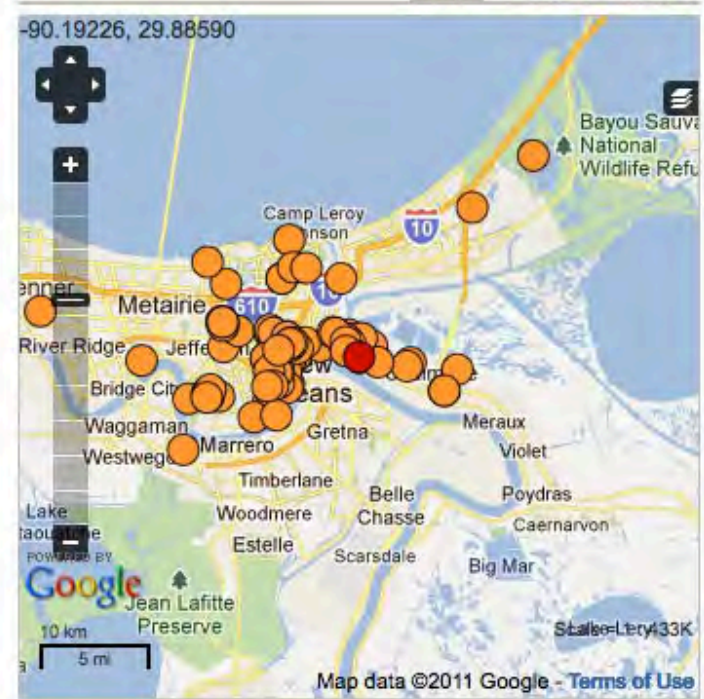
The image(s) above are licensed under a Creative Commons Attribution-NonCommercial-ShareAlike 3.0 Unported License.

Attribution: <http://katrinamem.org/reports/view/24>

News Source 1

Credibility: 0

Map Images News



Wider map

Hey y'all, check out <http://t.co/pUPVkhX> #katrinamem for Katrina commemorations along w/ our page <http://t.co/egyvxhJ>

From: [wwoz\\_neworleans](#)








<http://www.flickr.com/photos/13023662@N07/2095391083/sizes/l/in/photostream/>




# Categorizing Commemoration

 PERSONAL

 GOVERNMENT-SUPPORTED

 EVENT


 INFORMAL

 FAITH-BASED


 FILM


 ART


 EXHIBITION


 NONPROFIT ORGANIZATION

 MUSIC

 COMMUNITY/NEIGHBORHOOD


 FUNDRAISING

 RESIDENTIAL


 PLANNED/PROPOSED

 GRAFFITI

 MEMORIAL SERVICE

 LITERARY

 FORUM

 ANNUAL EVENT



<http://www.artscouncilofneworleans.org/article.php?story=20081208164221496>



<http://www.flickr.com/photos/michelledwight/5594207635/>





[http://photos.nola.com/photogallery/2010/08/hurricane\\_katrina\\_body\\_art\\_9.html](http://photos.nola.com/photogallery/2010/08/hurricane_katrina_body_art_9.html)



[http://photos.nola.com/photogallery/2010/08/hurricane\\_katrina\\_body\\_art\\_43.html](http://photos.nola.com/photogallery/2010/08/hurricane_katrina_body_art_43.html)

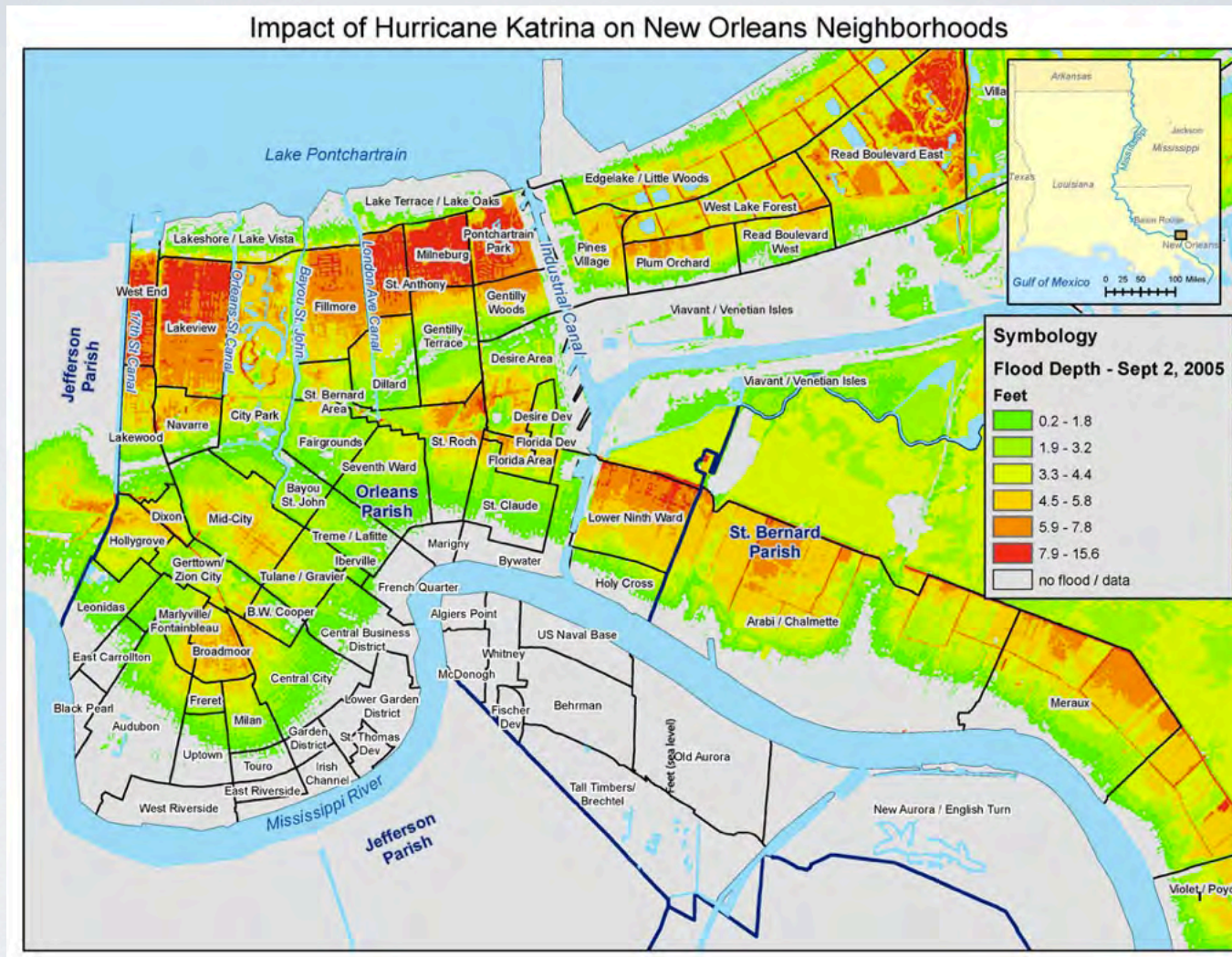
“Tattoo artists interviewed by the *Associated Press* a year after the hurricane indicated that as many as half of their customers wanted storm-related inscriptions (Plaisance, 2006).”

Gentry & Alderman, 2006, *Trauma Written in Flesh, Tattoos as Memorials and Stories*

# Methodology

1. Defining Commemoration and Category
2. Data Collection
3. Defining / Quantifying 'Impact'
4. Analysis

# Flood Depth



Data Sources: 1) Katrina deaths by neighborhood - Boyd, E. 2006. "Preliminary Summary Report of Hurricane Katrina Deceased Victim Recovery Locations in Louisiana." Proceedings to the 2006 ESRI Health GIS Conference, October 2006, Denver, CO. <http://gis.esri.com/library/userconf/health06/index.html>. 2) Neighborhood boundaries created by Mike Winiski using 2000 census tracts from <http://www.census.gov/geo/www/tiger/> and neighborhood definitions from <http://nutrias.org/facts/noneigh.htm>. 3) Flood depth estimation DEM from Data distributed by LSU GIS Information Clearinghouse: CADGIS, [http://katrina.lsu.edu/products\\_reports\\_download.asp](http://katrina.lsu.edu/products_reports_download.asp). 4) Water boundaries from <http://www.data.gov/geodata/g759763> and <http://www.data.gov/geodata/g779183/>. 5) Demographic information from [http://factfinder.census.gov/home/saff/main.html?\\_lang=en](http://factfinder.census.gov/home/saff/main.html?_lang=en), aggregated to neighborhoods by Mike Winiski. 6) Star plots create by Mike Winiski using R Project for Statistical Computing Software, <http://www.r-project.org/>

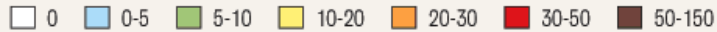


# Fatality Rate

## DEADLY FLOODING FROM HURRICANE KATRINA'S LEVEE BREACHES

Most Katrina deaths were caused by fast-moving, rising water. The highest numbers of fatalities were found in the Lower 9th Ward near the Industrial Canal floodwall breach and the portion of St. Bernard Parish containing St. Rita's Nursing Home.

**NUMBER OF DEATHS PER 1,000 PEOPLE THAT REMAINED IN ORLEANS AND ST. BERNARD PARISH NEIGHBORHOODS WHEN KATRINA HIT\***



\*Scientists estimate 10 percent of population did not evacuate or go to shelters.

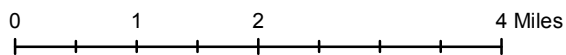
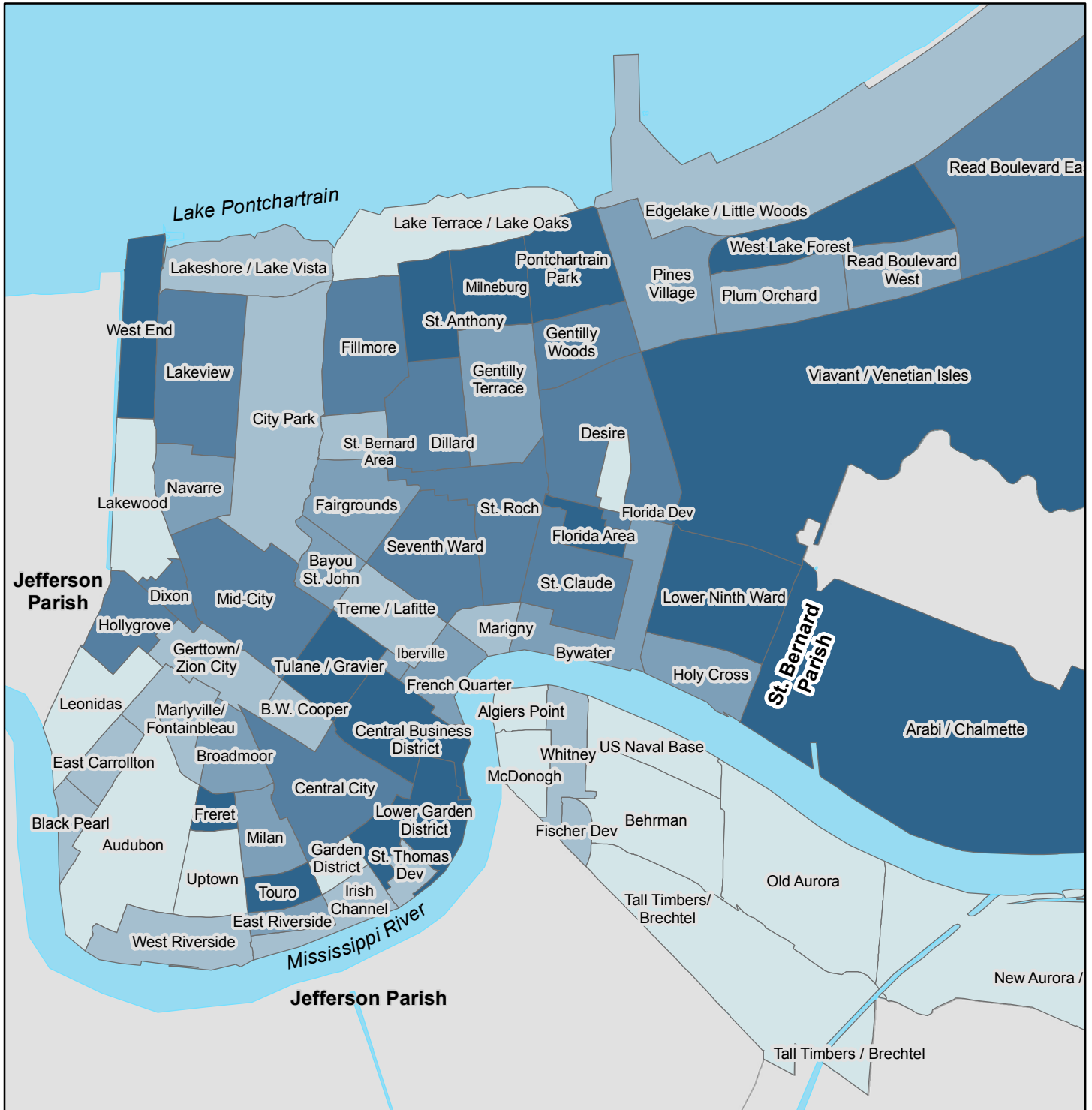


Source: Risk Analysis Journal

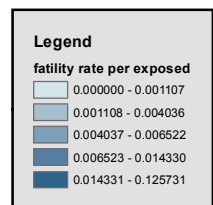
THE TIMES-PICAYUNE

(The Times Picayune, 2009)

# New Orleans - Fatality Rate per Exposed Individual (Hurricane Katrina)



Boyd, 2011, Fatalities Due to Hurricane Katrina's Impact Impacts in Louisiana

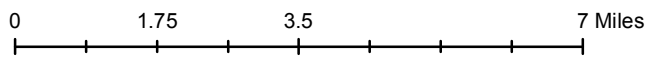
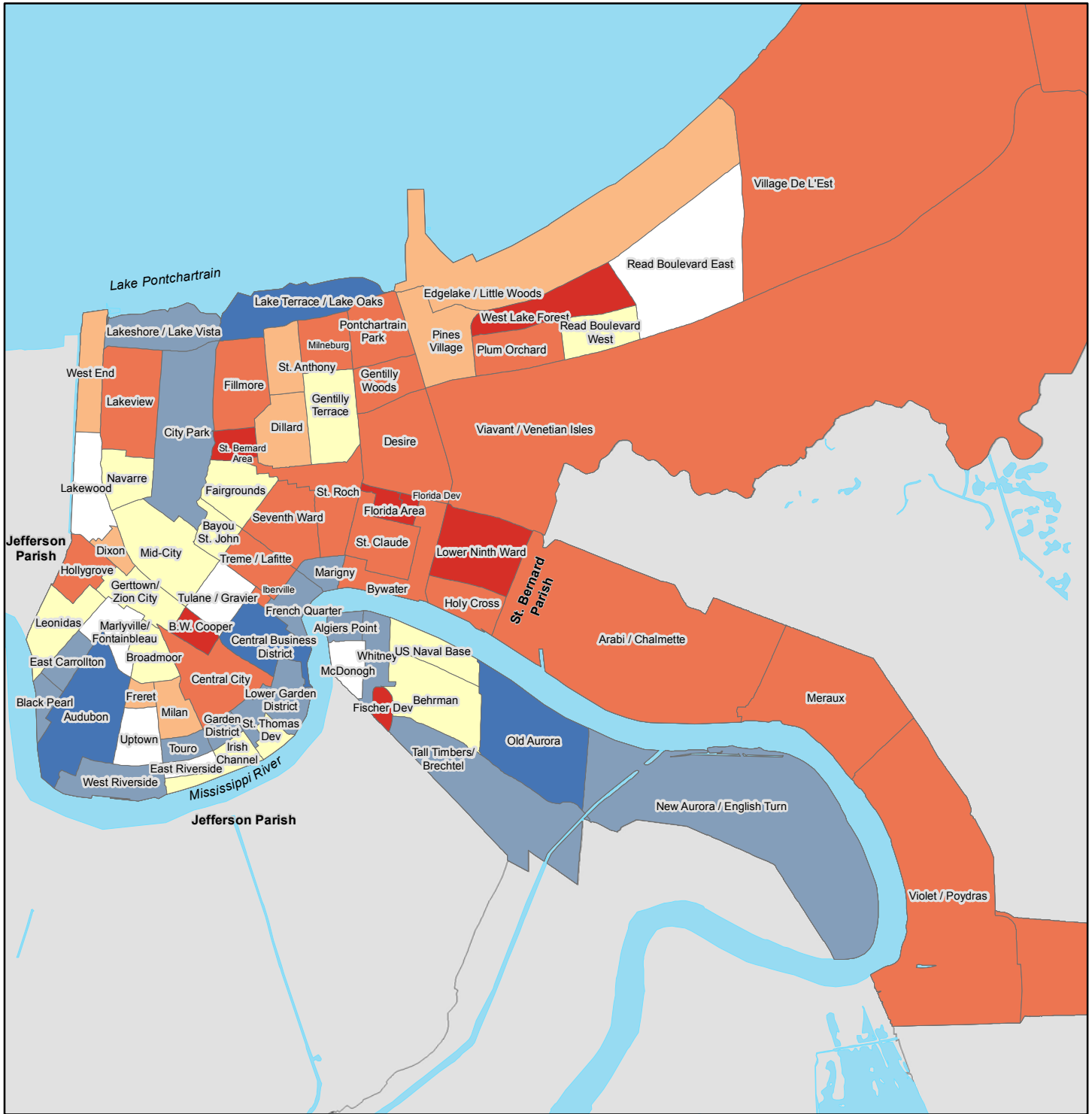


Quantile Classification

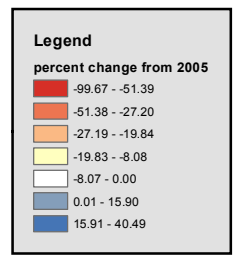
# Lower Ninth Ward Community Village



# New Orleans - Percent Change in Total Population from Katrina to Present (2010)

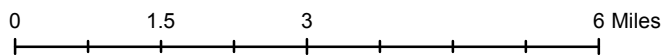
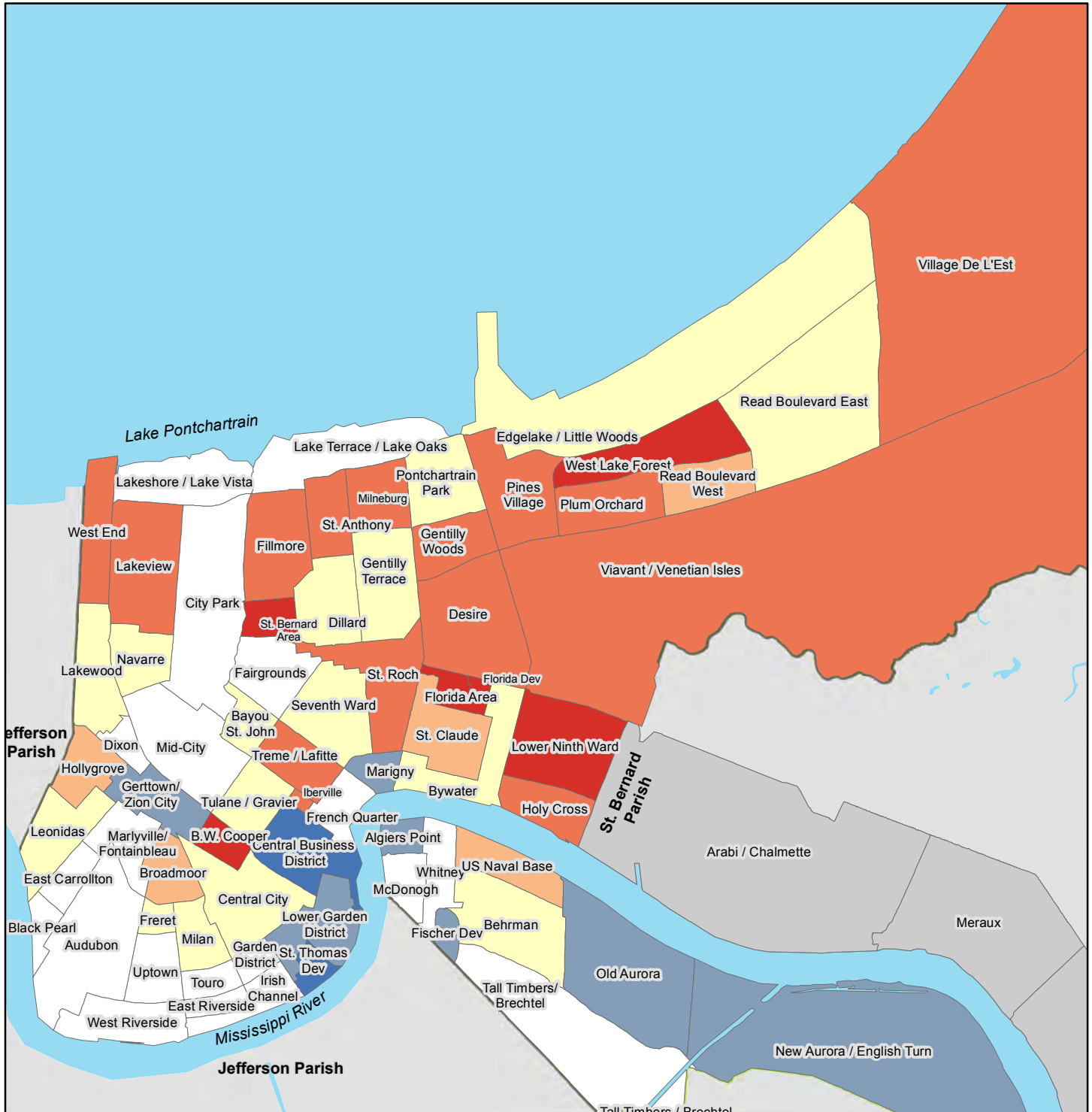


Based on a comparison of 2010 census data and 2000 census data (adjusted for population loss rates based on the American Community Survey - 2005 One-Year Estimates)

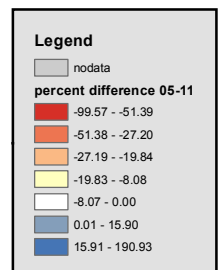


manual classification

# New Orleans - Percent Change in Population pre-Katrina (June 2005) to June 2011



Based on Valassis database (addresses receiving mail) provided by the GNOCDC

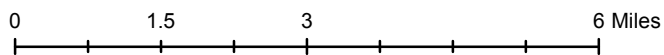


manual classification

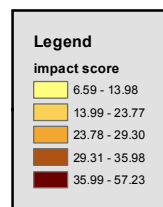




# New Orleans - Impact Measure (Using Census Return Rates)



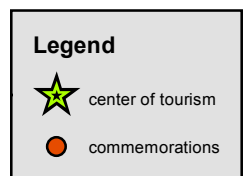
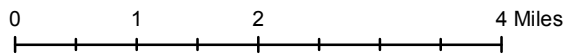
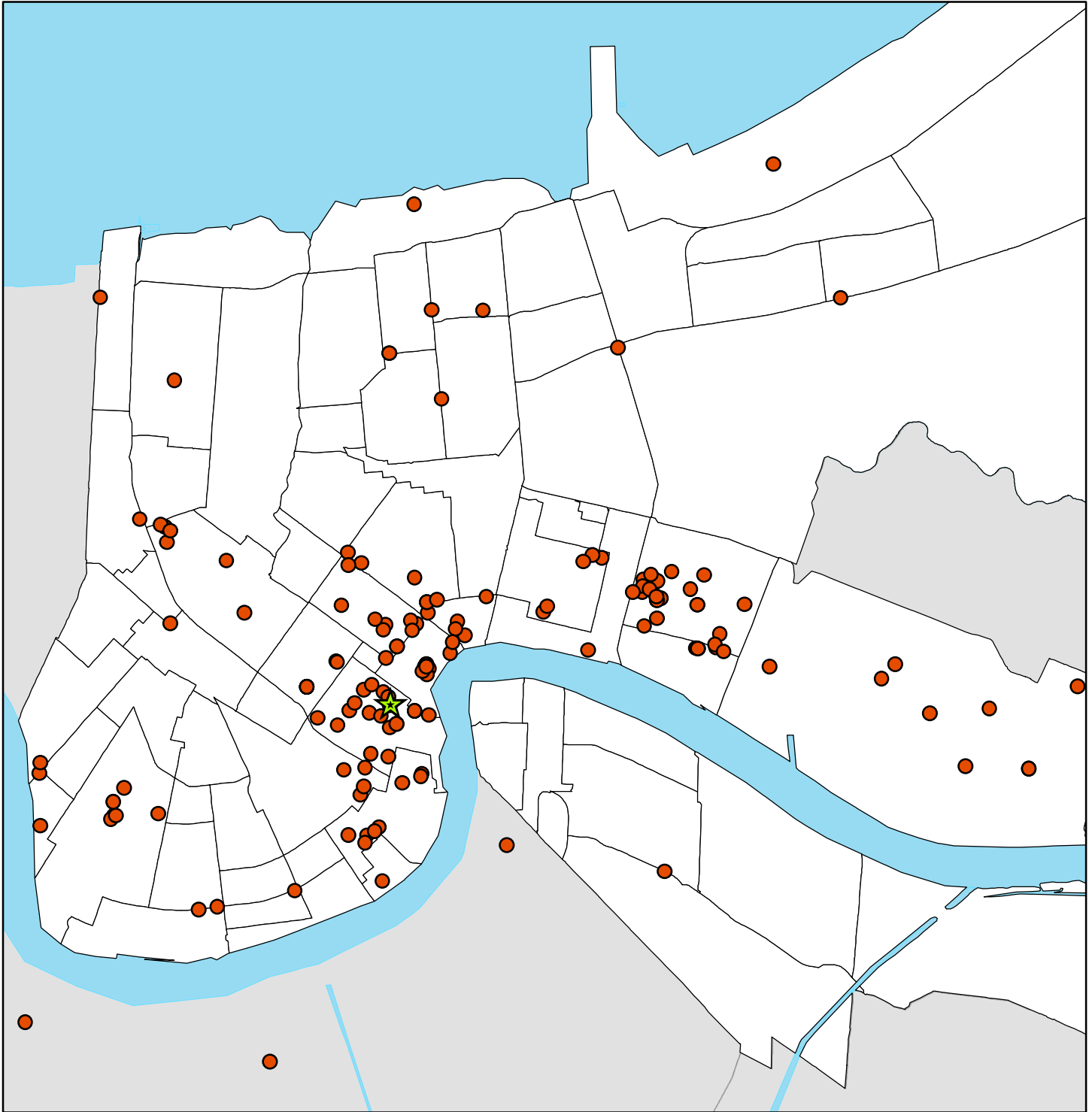
Flood Depth (35%)  
 Fatality Rate (25%)  
 Return Rate (25%)  
 Child Return Rate (15%)  
 Blight (5%)



Quantile Classification

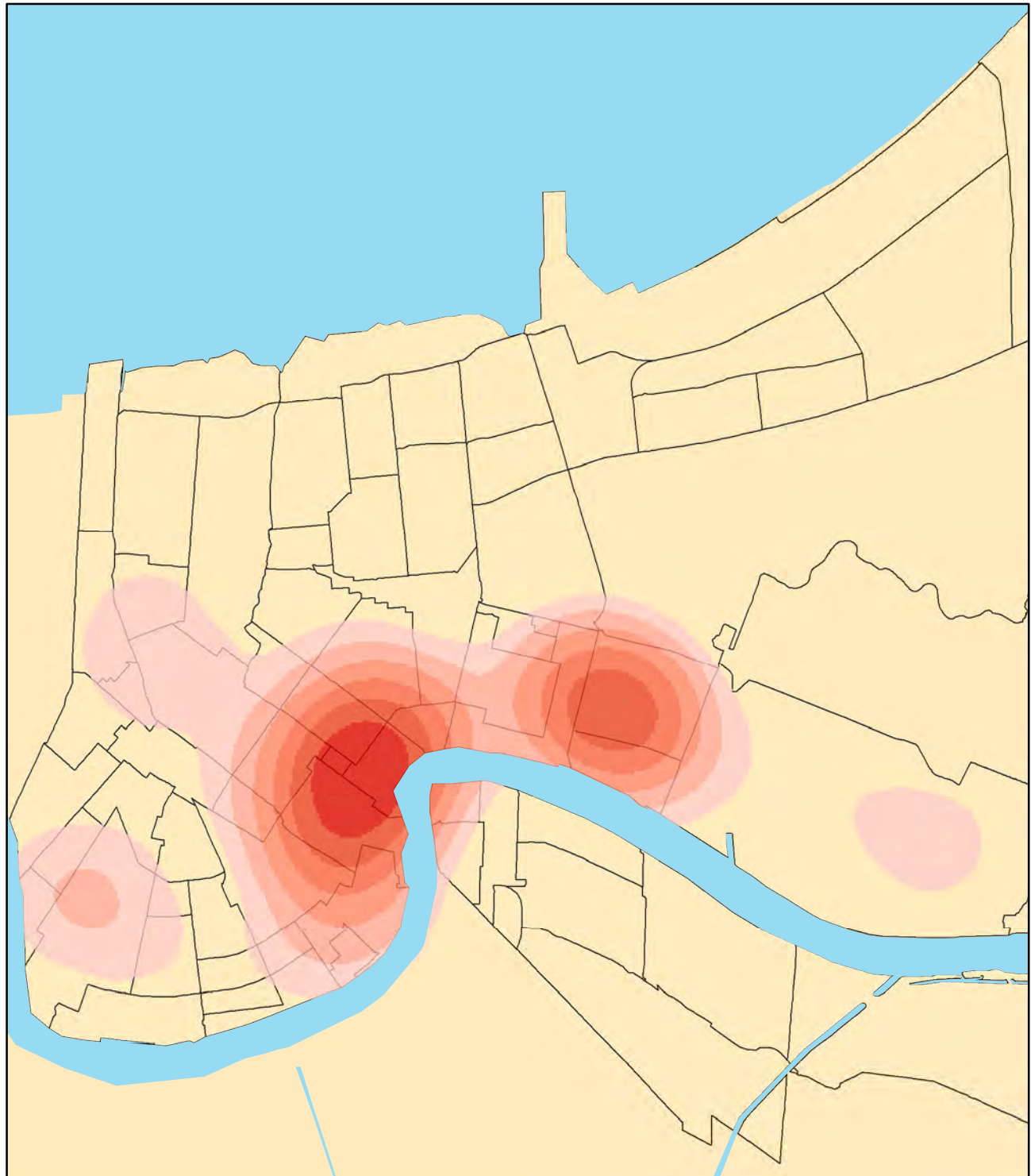


# New Orleans - Commemorations (all categories)

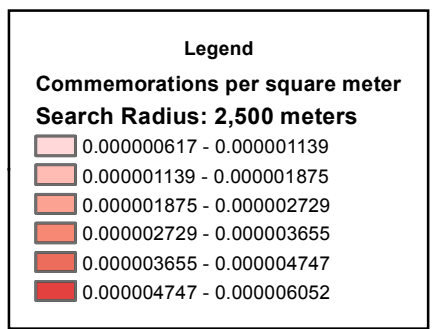




# Kernel Density of All Commemorations



0 1 2 4 Miles



Natural Breaks  
(Jenks) Classification

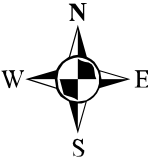
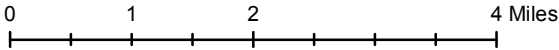
# Analysis

- 1) To what degree, if any, is the distribution of commemorations and types spatially autocorrelated across the entire study area?
- 2) Which local units have the most significant impact on the overall degree of spatial autocorrelation?
- 3) Do the local units with the most significant impact on spatial autocorrelation correspond to areas of high 'impact', poverty, or high minority percentage?

# New Orleans - Memorial Hotspots (Getis-Ord Gi / Fixed Distance Band)

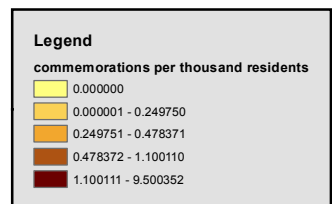
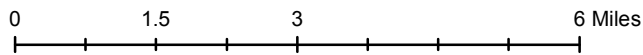
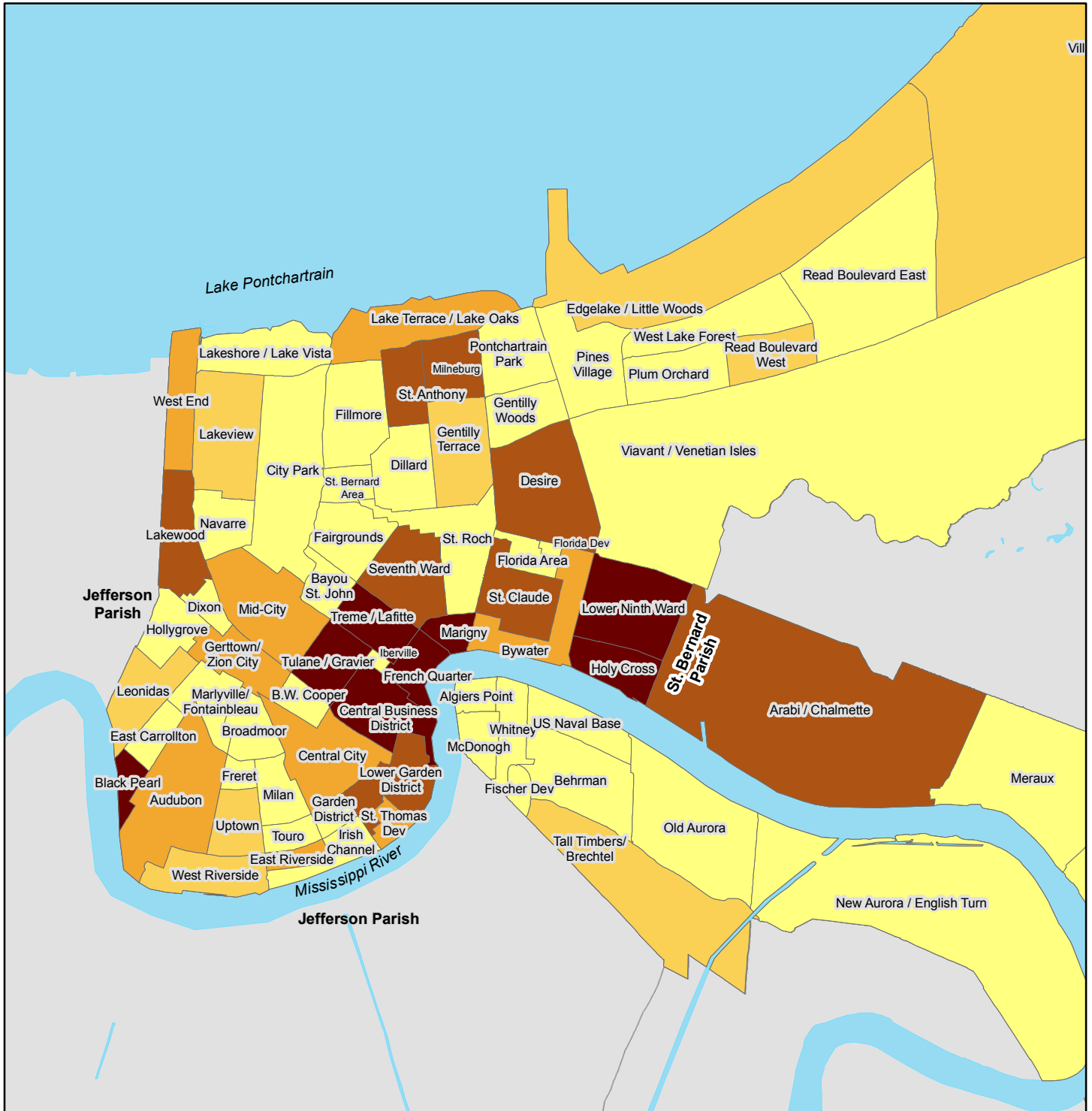


2500m distance band



Legend	
GiZScore	
Dark Blue	< -2.58 Std. Dev.
Medium Blue	-2.58 - -1.96 Std. Dev.
Light Blue	-1.96 - -1.65 Std. Dev.
Yellow	-1.65 - 1.65 Std. Dev.
Light Orange	1.65 - 1.96 Std. Dev.
Orange	1.96 - 2.58 Std. Dev.
Red	> 2.58 Std. Dev.

# New Orleans - Commemorations Per Capita by Neighborhood

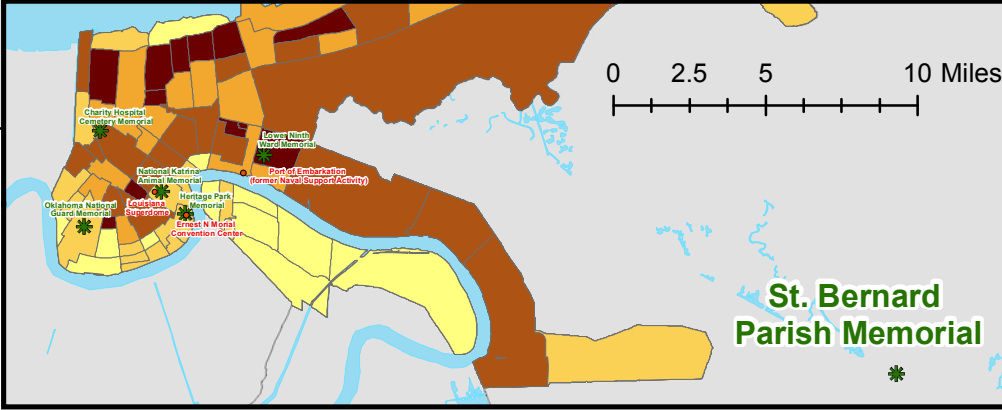
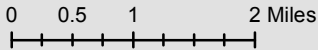
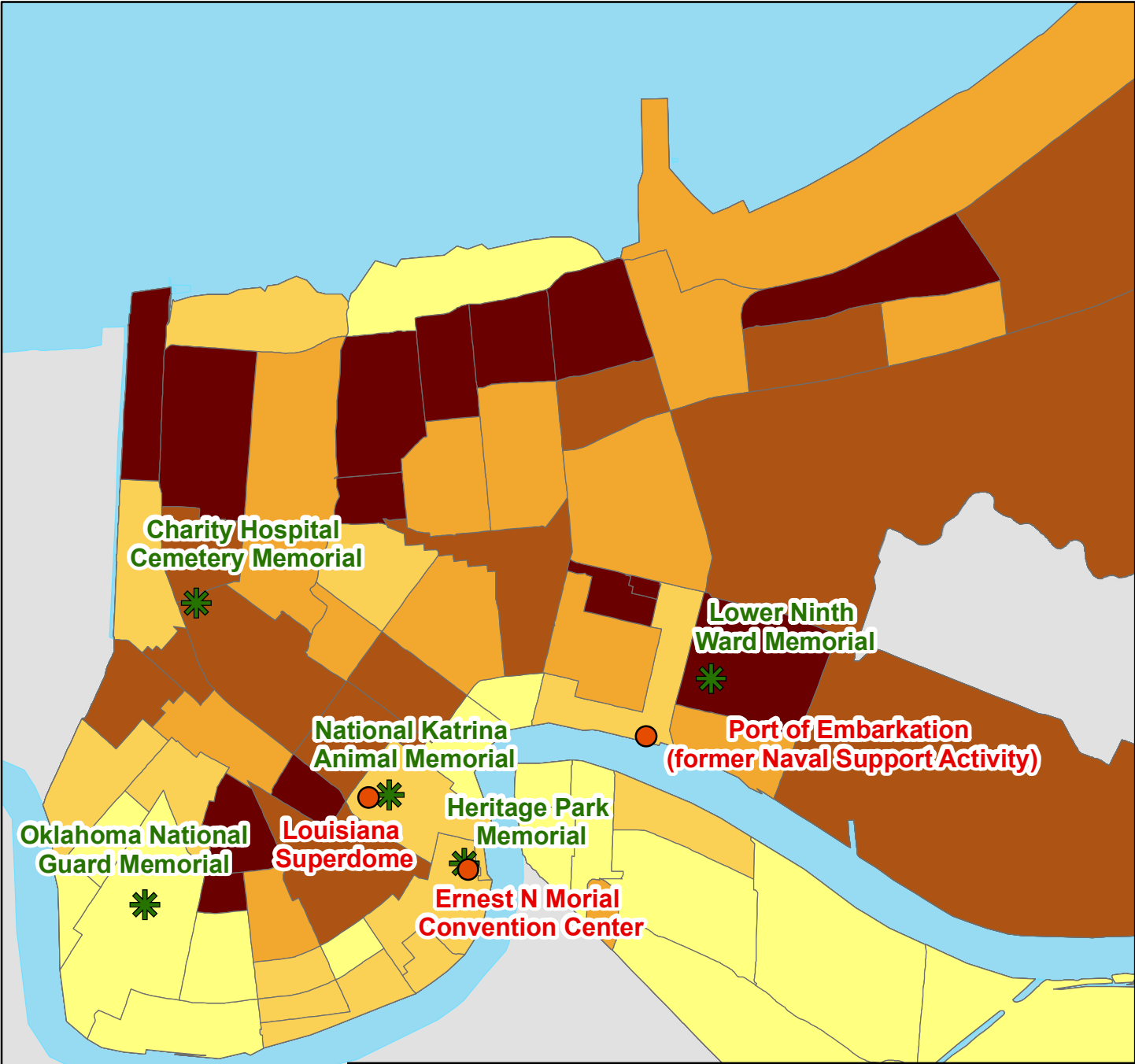


quantile classification



Quote from the Final Report of the Hurricane Katrina Memorial Commission to the Louisiana Legislature (2007)

“After a tour of the Riverfront area and further discussion by the Commission the majority of the Commission members support the Port of Embarkation as the first choice for the site of the Memorial. Located on the Mississippi River, and in the heart of New Orleans, the site is easily accessible for large numbers of people, both residents of Louisiana affected by Hurricane Katrina and those who come to the city from outside the state. The Riverfront is a destination for those coming to visit the Memorial and a landmark to be identified by official tours in New Orleans;”

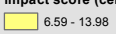
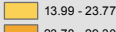
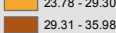
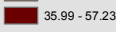

# New Orleans - Permanent Memorials (Government Supported) and Impact



**Legend**

-  landmarks
-  memorial location

**Impact score (census)**

-  6.59 - 13.98
-  13.99 - 23.77
-  23.78 - 29.30
-  29.31 - 35.98
-  35.99 - 57.23



# St. Bernard Parish Memorial - Shell Beach

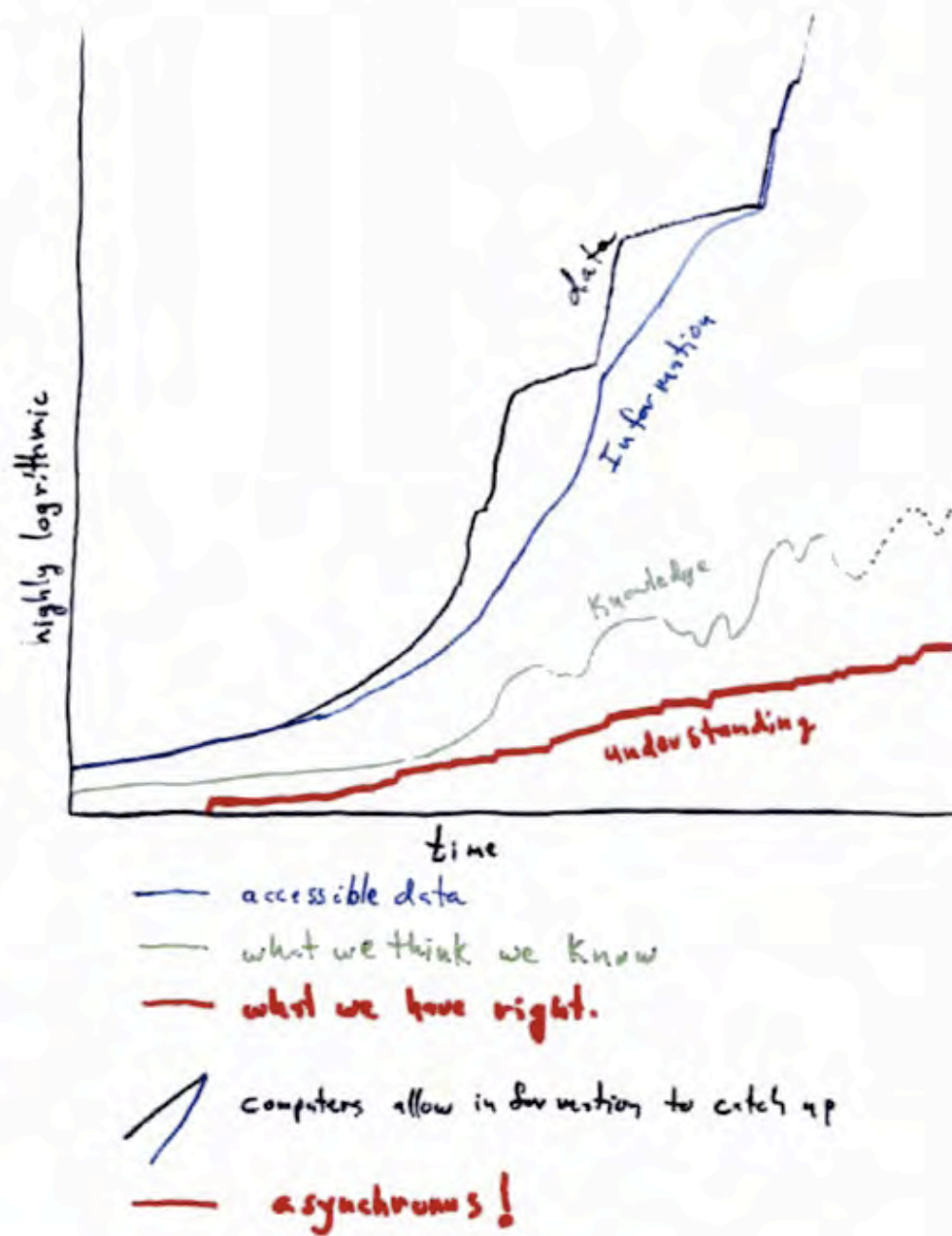


# Mississippi River Heritage Park Memorial



<http://www.panoramio.com/photo/29595831>

"While it is hard to know how the introduction of a memorial mall in the New Berlin will influence the existing national commemorative landscape, some experts are concerned that this new centralizing trend - which they associate with a global Holocaust industry and its easily consumed, popular representations of "the Holocaust" - will detract attention and cultural significance from the existing national decentralized network of authentic historic sites that emerged in the 1980s in West Germany ... For second- and third-generation educators, historian, directors, and citizen initiatives, such authentic historic sites are places where future generations should bear witness and confront the histories and consequences of National Socialism. The emergence of a memory district, as well as criticisms of it, raise important questions about the moral economies of (post)memory, authenticity, and Holocaust tourism at local, national, and international levels" (Till, 2005, *The New Berlin*, p.22).



Kargel, 2004, *Mars: A Warmer Wetter Planet*

# Next Steps

- Resolving discrepancies in fatality rates / data access
- Interview residents of Gentilly, Lakeview
- Counts, weights, lines, areas, and time
- Explore ways to combine distant and close analysis of New Orleans commemorations

# Acknowledgements

- Thanks to Lorraine Dowler for her expertise, encouragement, tough questions, and guidance;
- The residents of New Orleans;
- Diane E. Boyd, Furman University;

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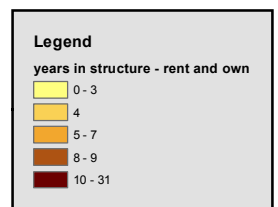
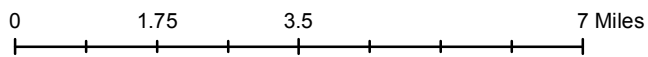
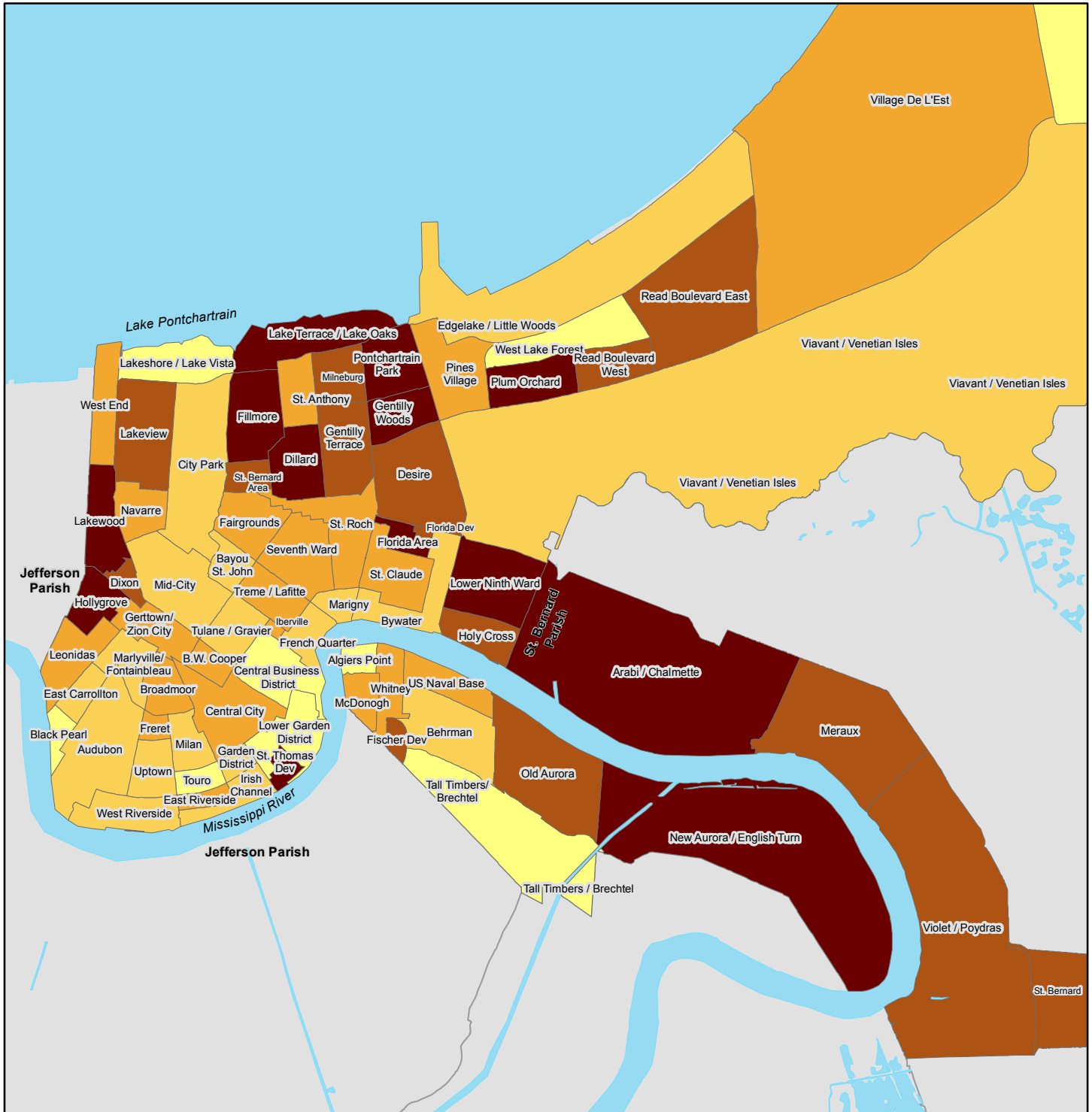
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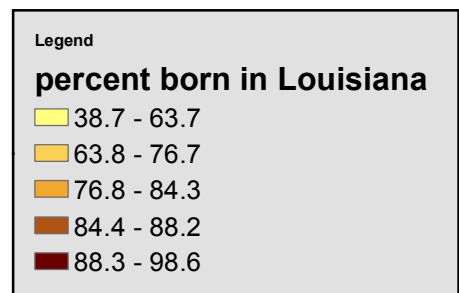
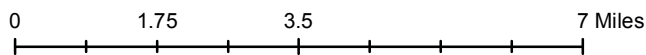
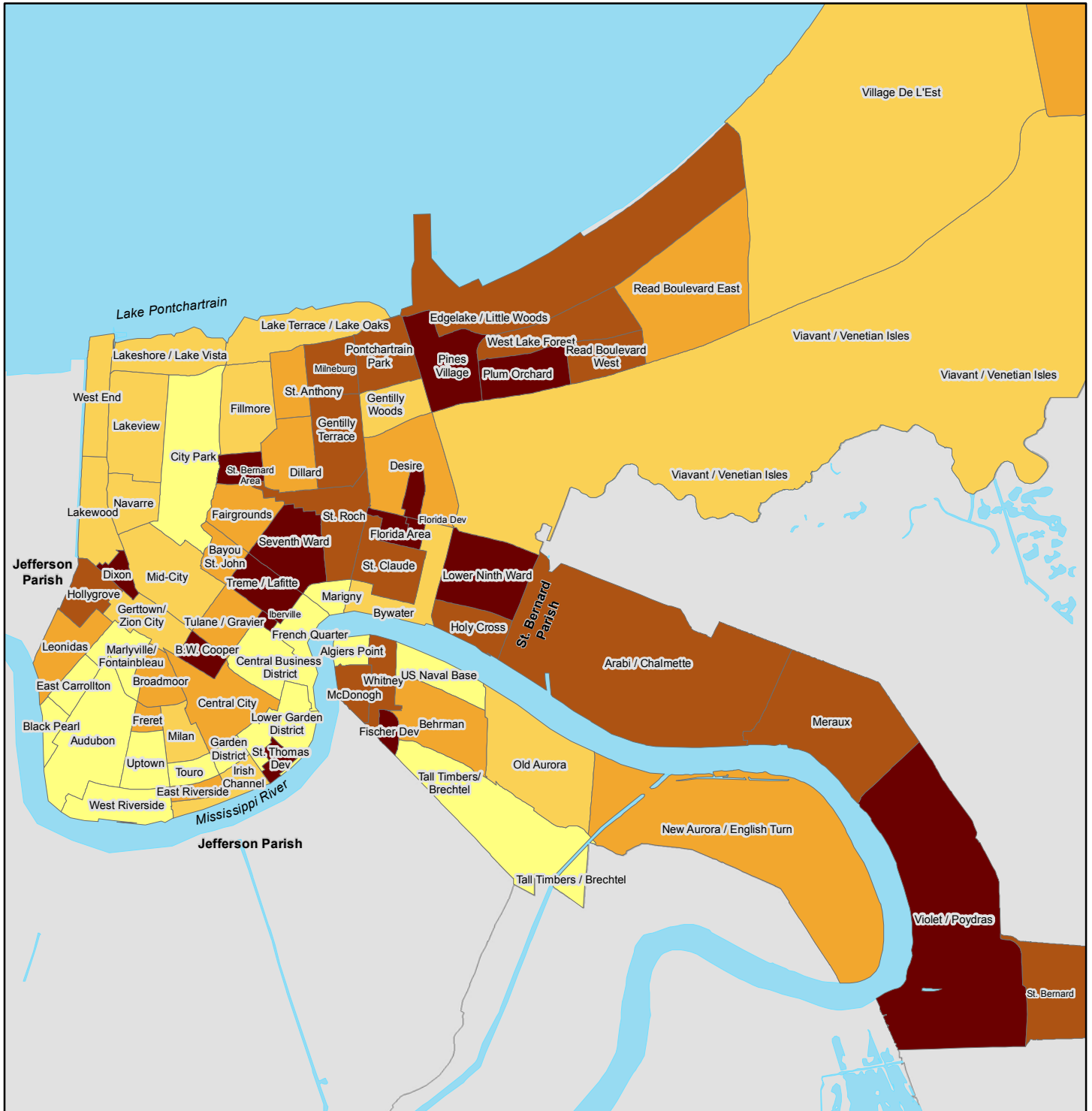
“A good map tells a multitude of little white lies; it suppresses truth to help the user see what needs to be seen. Reality is three-dimensional, rich in detail, and far too factual to allow a complete yet uncluttered two-dimensional graphic scale model. Indeed a map that did not generalize would be useless” (Monmonnier, 1996, p.25).

# New Orleans - Median Years in Residence (Homeowners and Renters - 2000 Census)



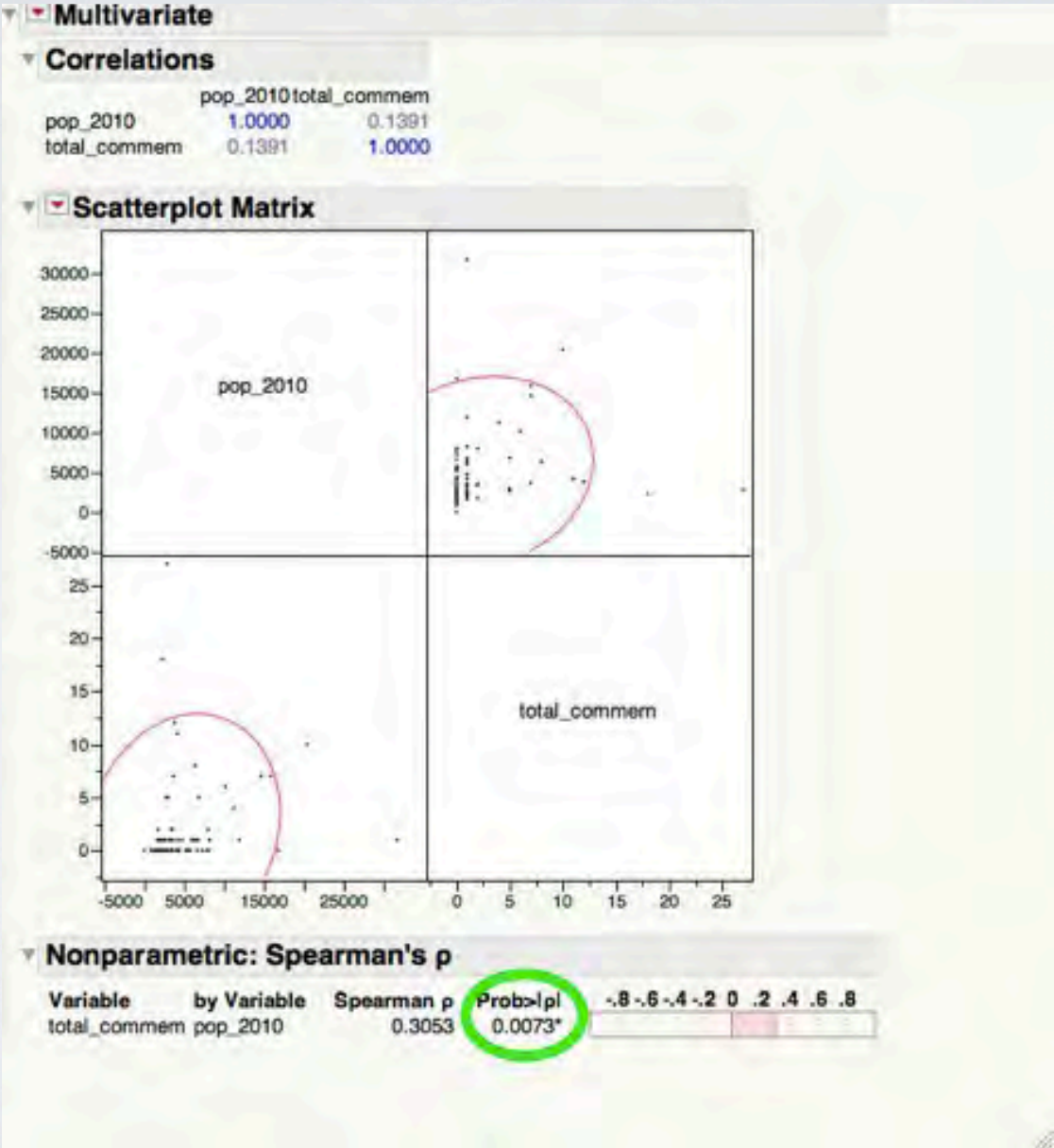
Quantile Classification

# New Orleans - Percent Louisiana Born by Neighborhood (2000)

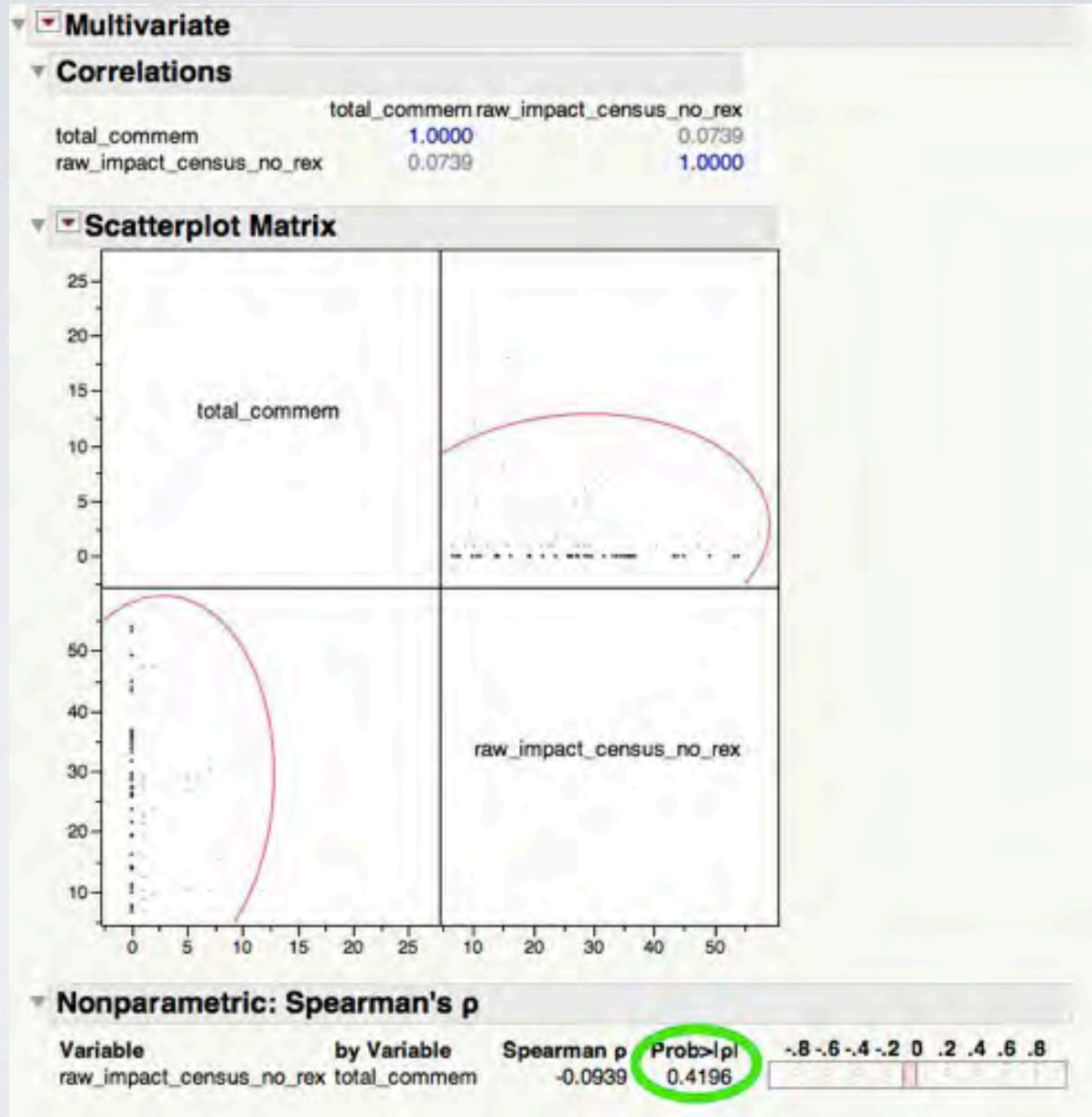


Quantile Classification

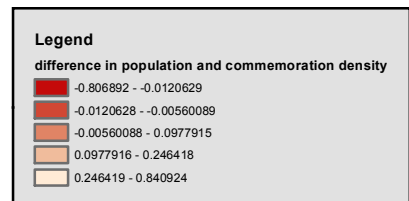
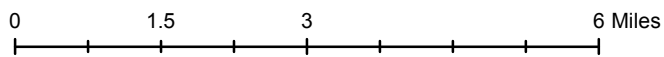
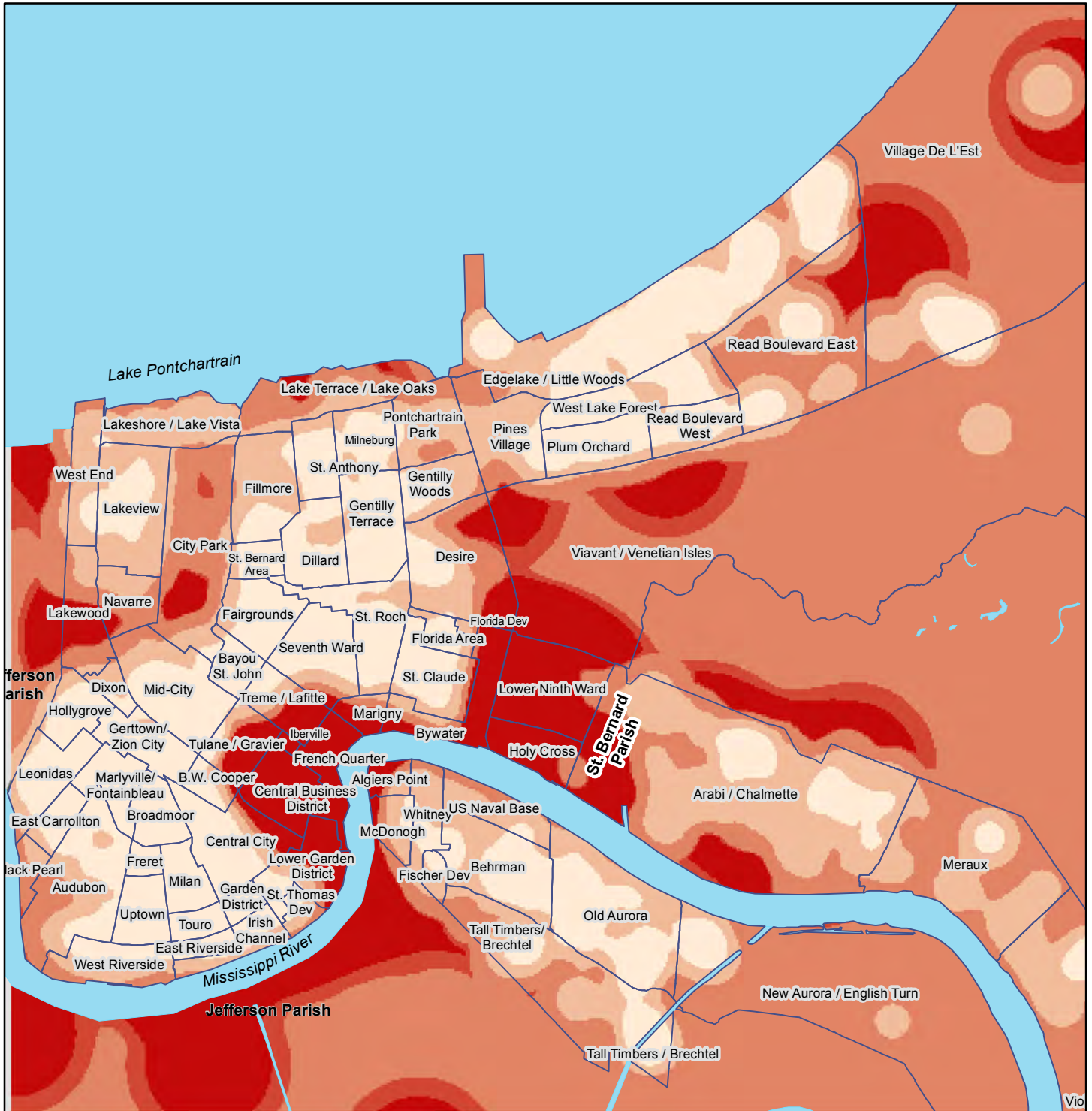
# 2010 Total Population (Census) and Total Number of Commemorations



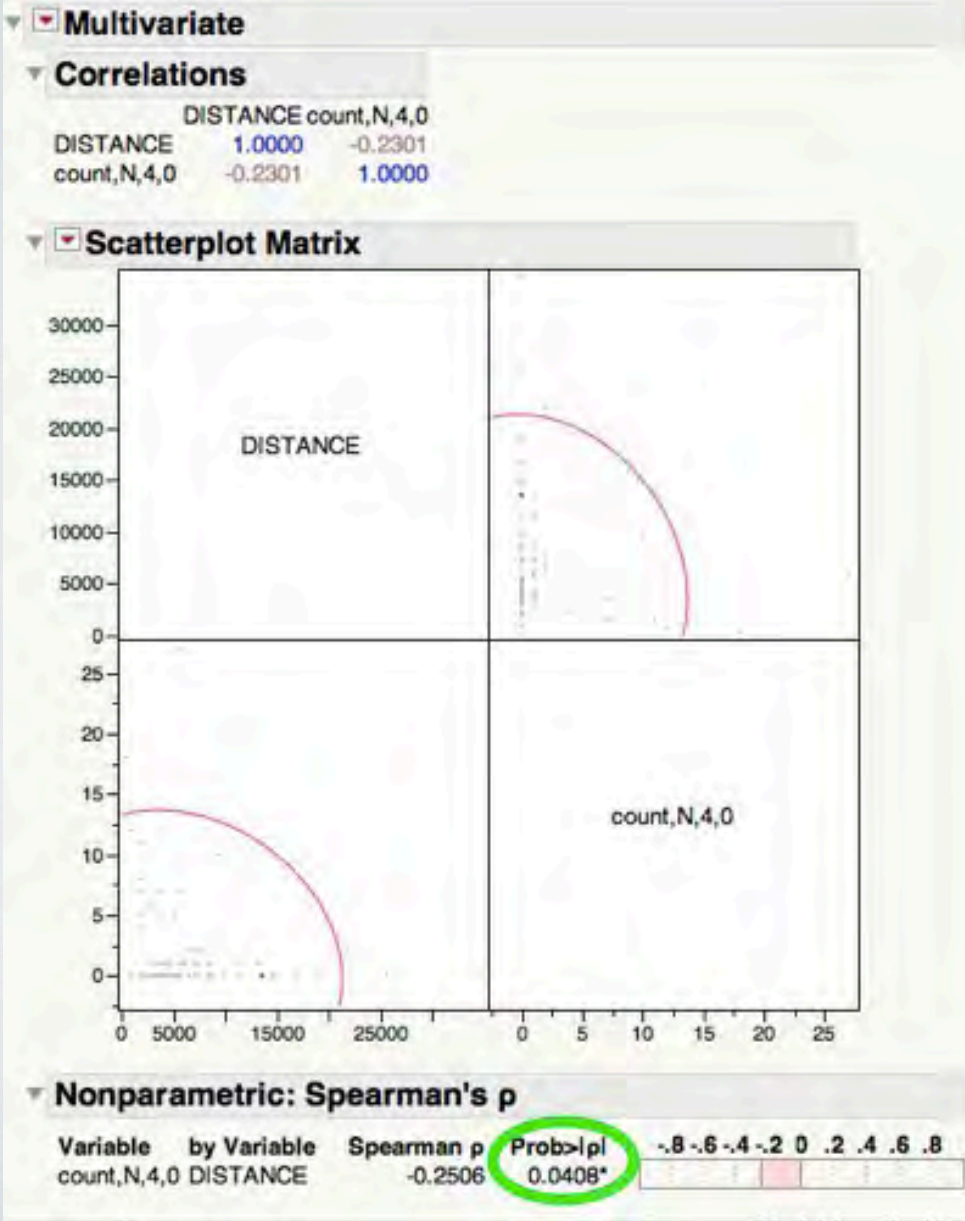
# Impact Score and Total Number of Commemorations



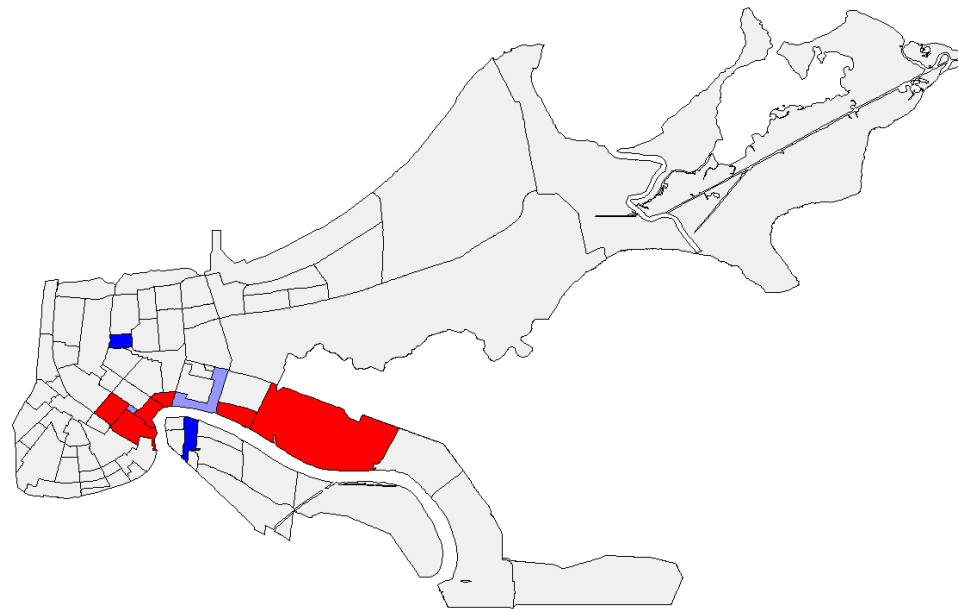
# New Orleans - Difference in Population and Commemoration Density (2010)



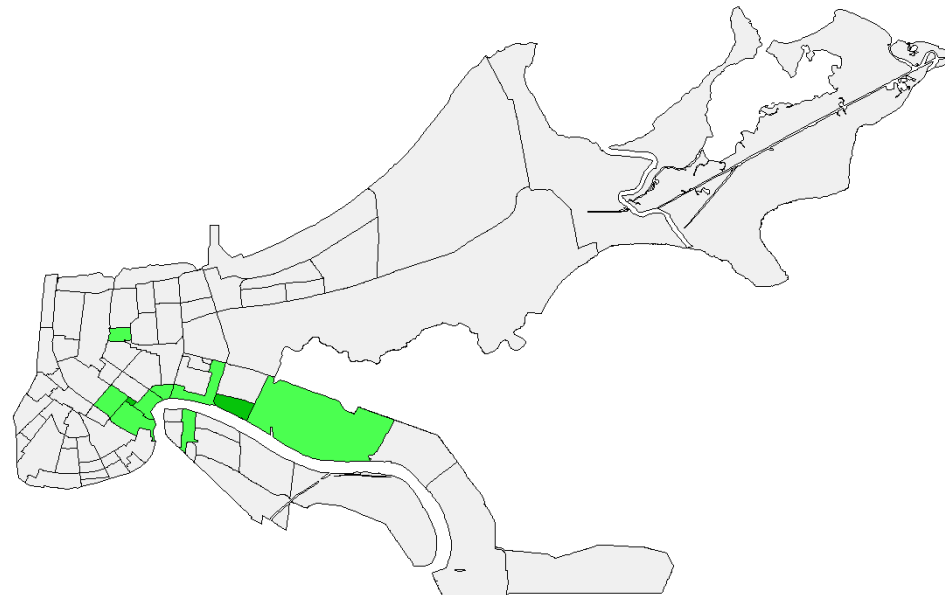
# Distance from Tourism Center and Number of Commemorations (excluding the West Bank)



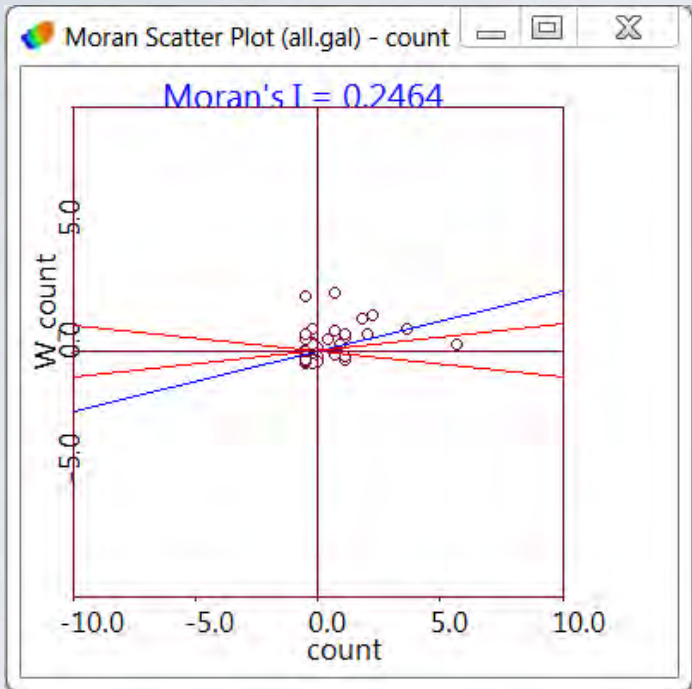
LISA Cluster Map:  
Not Significant  
High-High  
Low-Low  
Low-High  
High-Low



LISA Significance Map:  
Not Significant  
 $p = 0.05$   
 $p = 0.01$   
 $p = 0.001$   
 $p = 0.0001$



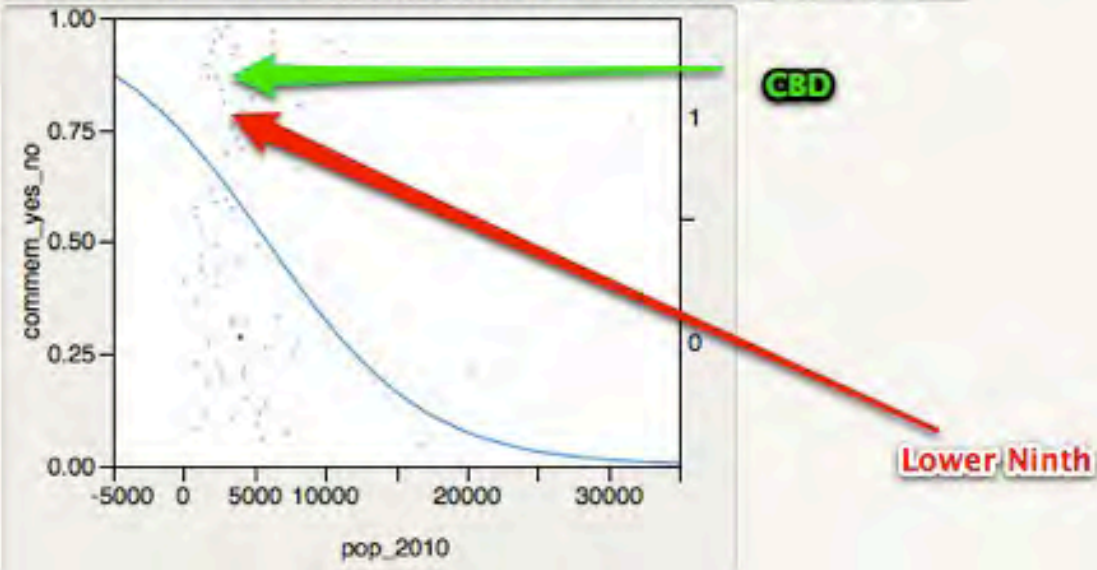




permutations: 499  
pseudo p-value: 0.002000

I:0.2464 E(I):-0.0133 Mean:-0.0162 Sd:0.0687

Logistic Fit of commem\_yes\_no By pop\_2010



Iterations

Whole Model Test

Model	-LogLikelihood	DF	ChiSquare	Prob>ChiSq
Difference	4.097629	1	8.195259	0.0042*
Full	48.159723			
Reduced	52.257352			

RSquare (U)	0.0784
AICc	100.484
BIC	104.981
Observations (or Sum Wgts)	76

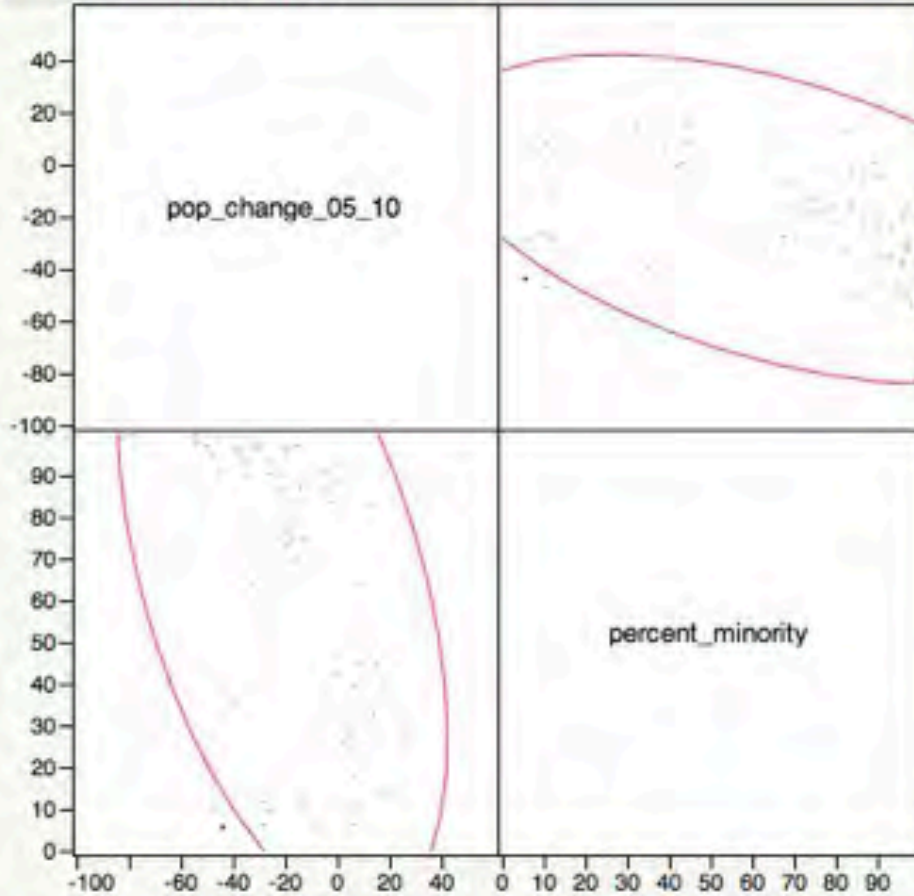
Measure	Training	Definition
Entropy RSquare	0.0784	$1 - \text{Loglike}(\text{model}) / \text{Loglike}(0)$
Generalized R-Square	0.1368	$(1 - (L(0)/L(\text{model}))^{2/n}) / (1 - L(0)^{2/n})$
Mean -Log p	0.6337	$\sum -\text{Log}(p[j]) / n$
RMSE	0.4714	$\sqrt{\sum (y_i - \hat{y}_i)^2 / n}$

▼ **Multivariate**

▼ **Correlations**

	pop_change_05_10	percent_minority
pop_change_05_10	1.0000	-0.4831
percent_minority	-0.4831	1.0000

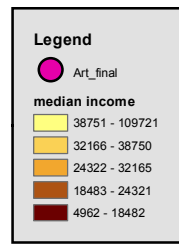
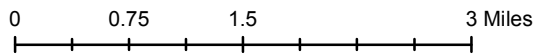
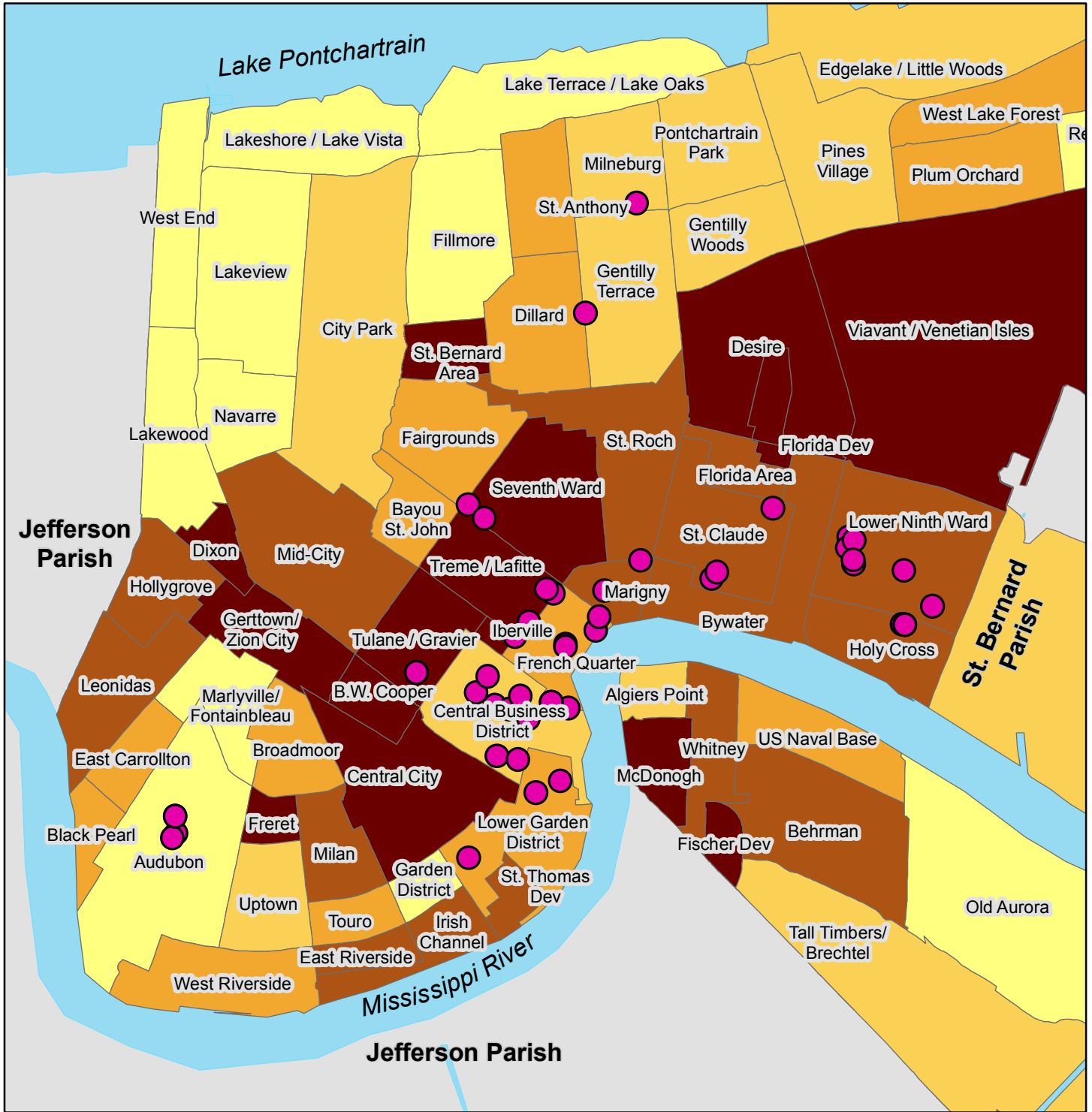
▼ **Scatterplot Matrix**



▼ **Nonparametric: Spearman's  $\rho$**

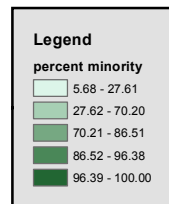
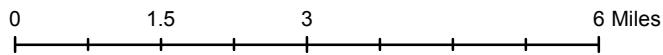
Variable	by Variable	Spearman $\rho$	Prob>  $\rho$									
percent_minority	pop_change_05_10	-0.5649	<.0001*	-.8	-.6	-.4	-.2	0	.2	.4	.6	.8

# New Orleans - Art and Median Income by Neighborhood (2000)



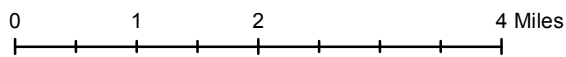
quantile classification

# New Orleans - Percent Minority by Neighborhood (2000)

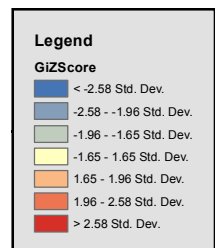


quantile classification

# New Orleans - Hot Spot Analysis (Getis-Ord Gi\*) with all Elysian Markers



2,500 m distance band



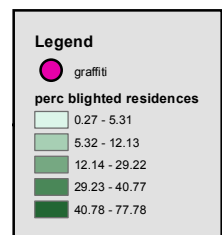
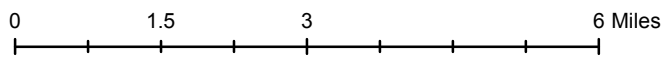
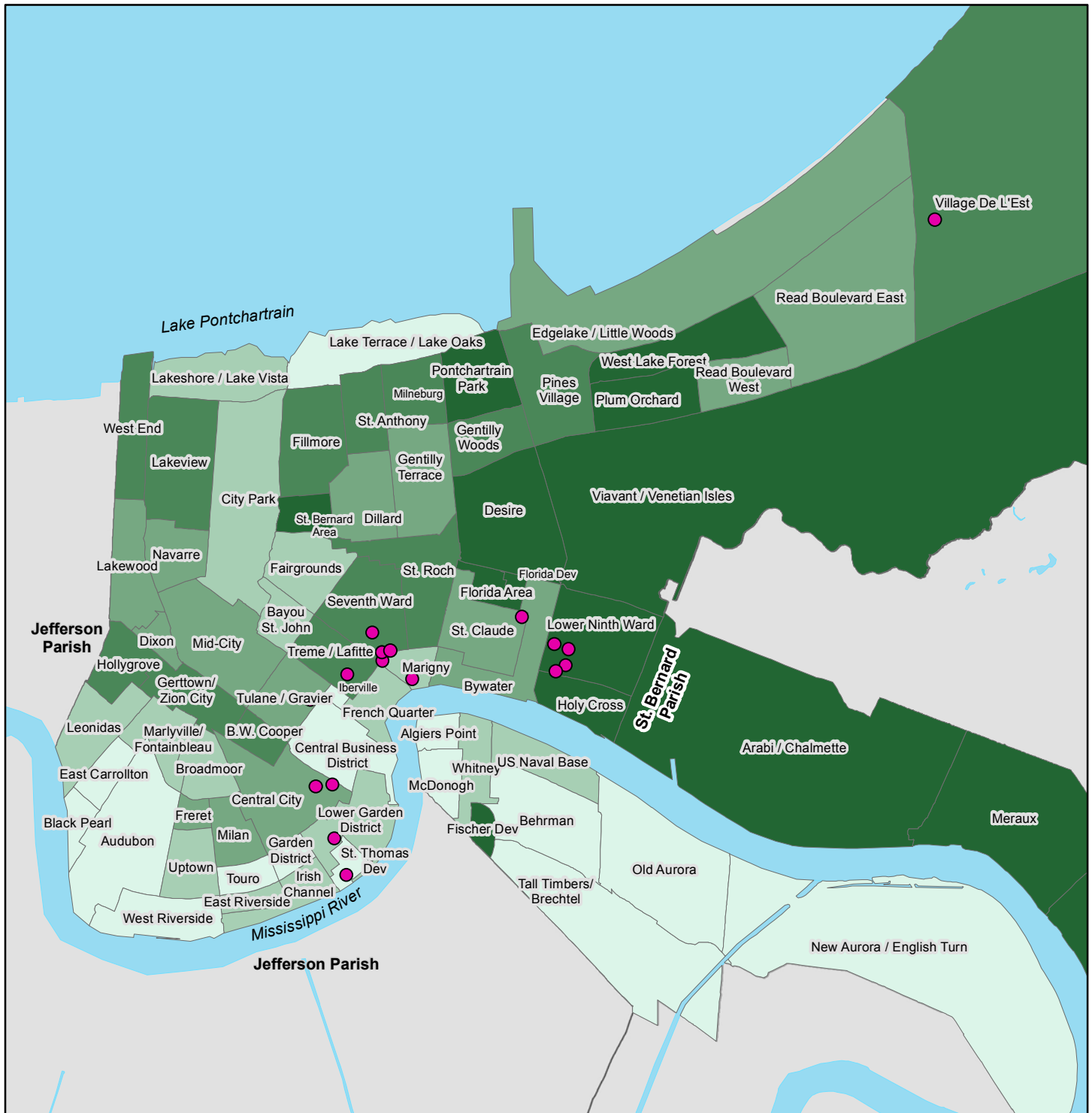
“In truth architecture defines our daily lives ... how we get up in the morning, how we move through our cities, in what conditions we will complete our work, and where our kids will play. We remain creatures susceptible to our environment. Whether this existence be harmonious or cumbersome, **it is architecture which hones our memories**” (Feireiss and Pitt, 2009, p. 470).

Brad Pitt



[http://www.makeitrightnola.org/index.php/work\\_progress/mir\\_homes/1809\\_deslonde\\_street/](http://www.makeitrightnola.org/index.php/work_progress/mir_homes/1809_deslonde_street/)

# New Orleans - Graffiti vs. Percent Blighted Residences by Neighborhood (Sept 30, 2010 - HUD)



Quantile Classification