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Geographies of Inequality: Urban Renewal and the Race, Gender, and Class of Post-Katrina New Orleans

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Recommended Citation
Deitz, Shiloh L. and Barber, Kristen M. "Geographies of Inequality: Urban Renewal and the Race, Gender, and Class of Post-Katrina New Orleans." *Race, Gender & Class* , No. New Orleans for Whom and What? (Dec 2015): 134-159.

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GEOGRAPHIES OF INEQUALITY
URBAN RENEWAL AND THE RACE, GENDER, AND CLASS OF POST-KATRINA NEW ORLEANS

"Shelve the abiding fiction that disasters do not discriminate—that they flatten everything in their path with 'democratic' disregard." –Hein Marais, 2006

Introduction

Hurricane Katrina began as a natural phenomenon but became a national tragedy as it illuminated the vulnerabilities of a city sitting below sea level, and especially of a people without the means to safely weather the storm. When the levees broke, floodwaters rushed into the city's lowest-lying and poorest neighborhoods, displacing predominantly black populations and single mother households (Litt et al. 2012; Peek and Fothergill 2008; Seager 2012; Weber and Peek 2012; Willinger and Knight 2012). And so the memory of Katrina is joined with intense scholarly and public discussions of race and class, and, to a lesser extent, of gender (Barber and Deitz 2015; David and Enarson 2012; Pardee 2014; Tobin-Gurley and Peek 2010). Scholars have considered the demographics of post-Katrina New Orleans as well as the way that public-private partnerships impacted the city's effort to rebuild (Campanella 2007; Colten 2006; Elliott and Pais 2006; Fussell 2007; Fussell, Sastry, and VanLandinghom 2010; Gotham and Greenberg, 2014; Hartman and Squires 2006; Logan 2006; Sastry 2009). Yet there is still too little attention paid to the multifarious population shifts after the storm, how they compare to pre-Katrina New Orleans, and how they reflect longtime inequitable settlement patterns. We are interested here in taking a bird's-eye view of what the neighborhoods of New Orleans look like in terms of race, class, and gender, and how different rebuilding policies continue to shape the lives of the city's most vulnerable people ten years out from the storm.

In this paper we take a close look at city and federal plans to rebuild New Orleans, and we map the demography of New Orleans both before Hurricane Katrina and after. Doing so, we

address pressing questions on the perpetuation of race, gender, and class inequalities in ongoing restoration practices shaping the "New" New Orleans. These questions include: What are the patterns of settlement and population loss in the city? And how do these patterns reflect race, gender, and class segregation and biases in government rebuilding efforts?

The Historical Geography of New Orleans

New Orleans was a diverse and integrated city around the turn of the 19th century, established mainly by French-speaking Catholics or Creoles and French-speaking Hispanics (Campanella 2007). With the Louisiana Purchase in 1803, Anglo-Americans began settling in the city in larger numbers. Later, Jim Crow laws ushered in firmer definitions of white and black as well as geographic segregation. In the early 20th century New Orleans saw its neighborhoods segregate with whites settling on higher land, leaving for blacks the areas further from the river – more likely to be swampy, flood prone, and mosquito infested (Fussell, 2007).

Geographer Richard Campanella (2007) describes New Orleans as a city with settlement shaped by an "ethnic geography," with mostly white wealthy residents living in higher elevated and environmentally secure areas. He notes: "Areas that lay farthest from sources of nuisance and risk *and* closest to amenities and opportunities commanded the highest prices and attracted the best infrastructure and housing" (706). After the Civil War, newly freed blacks who were "destitute and the target of racial prejudice" had few other options than to settle in risky and less desirable areas in the "back-of-town" (708). We might identify one such area today as the Lower 9th Ward, where homes lined the poorly maintained levee system that, along with a drainage system installed between 1893-1915, kept these areas livable, albeit not always dry.

New Orleans has a long history of comprehensive city planning that has both shaped and been shaped by the larger racial landscape. For example, the Jim Crow era planning efforts of

city-hired consultants, Milton Mendary and Harland Bratholemew, from 1920 to 1960, created a "separate and unequal environment for black and white citizens" (Reese 2014, 98). Mendary and Bratholemew's plans for the city "were silent about most of the deplorable human effects of racial oppression and segregation" (100). And as Reese (2014) argues, city planners on the frontlines of restoring social life to the city need to understand just how racism creates "stigmatized zones" that further ghettoize the already disenfranchised.

This history of settlement and city planning in New Orleans explains in part why poor blacks suffered more when the levees broke, especially the 10% of families headed by poor, black, single mothers (Enarson 2012; U.S Census Bureau 2000). Immediately following the storm, 61% of New Orleanians' residences were flooded. While whites made up 28% of the city's population and 20% of the residents living in flooded areas, blacks made up 67% of the city's population and 76% of those whose homes were below sea level (Campanella 2007). The slow return of the most vulnerable populations to New Orleans is highly correlated with the risk that these populations faced before the storm. However, the decisions made after the storm also impacted who returned and where. In the processes of recovery and urban renewal that unfolded post-Katrina we see both a recognition of the relationship between urban design and racial inequality alongside either a perceived inability or lack of motivation for something different. In the following pages we explore the various efforts of recovery and urban renewal post-Katrina in hopes of providing some context for the demographic shifts that have occurred.

Recovery and Urban Renewal in the Wake of Katrina

FEMA Focused Rebuilding

City planners and officials have long overlooked the social inequalities shaping New Orleans' landscape, and efforts to rebuild and imagine a "New" New Orleans post-Katrina are no

different. Even before Hurricane Katrina swept ashore, the Federal Emergency Management Association (FEMA) did not seriously consider the need to develop a city-requested contingency plan for potential powerful hurricanes. And President George W. Bush vetoed bills requesting funds for the Army Corps' restoration of the insufficient levee system bordering poor black neighborhoods (Boyer 2014). FEMA shrugged preparedness off to a contractor, who spent $1 million drafting a disaster mitigation plan (Elliston 2004; IEM 2004); but after submitting the report to FEMA, Michael Brown, then head of FEMA, said that "money was not available to do the follow-up" work necessary to implement recommendations (Fournier and Bridis 2005).

Corruption and unethical conduct characterized much of the city's early government contracted work, yielding an inadequate response to the enormous city recovery efforts. Under the Bush administration, FEMA worked with a $10.6 billion rebuilding budget for Hurricane Katrina, but the United States House of Representatives Committee on Government Reform concluded that $8.75 billion of these contracts were fraught with waste, fraud, and mismanagement. The AshBritt group, for instance, was paid half a billion dollars by FEMA to remove debris from city streets, even though the company did not own a single dump truck.[i] And in 2007, even after this money had been spent, Charity Hospital, which served the poor and indigent, was still closed, the court system was hardly functioning, the privatized electricity company, Entergy, had failed to repair the energy grid, public transportation was nearly non-existent, and public housing projects were boarded up and empty (Klein 2014). For poor single mothers in particular, the lack of basic infrastructure like public transportation, day care, schools, medical facilities, and jobs made returning to the city and rebuilding their lives nearly impossible (David and Enarson 2012; Enarson 2012; Litt, Skinner, and Robinson 2012; Reid 2012).

FEMA planned to demolish city-designated blighted properties, and between 2006 and

2007 it flattened about 3,800 properties, many of which were only lightly damaged or already gutted and ready for repair. Residents worried they would lose their homes and many desperately placed "do not demolish" signs in their yards (Boyer 2014). FEMA also helped the New Orleans Housing Authority to demolish the Big Four housing projects—despite lack of damage. This demolition prompted United Nations (UN) officials to call for an immediate halt, citing human rights violations. UN experts stated: "… the lack of consultation with those affected and the disproportionate impact on poorer and predominantly African-American residents and former residents would result in the denial of internationally recognized human rights" (2008). This did not stop demolition, however, and FEMA moved forward with work that left many people whose families had lived for generations in New Orleans with little option but to remain in FEMA trailers or to build lives elsewhere. In its only attempt to help residents rebuild their homes, FEMA created the $11 billion Road Home Homeowner Assistance Program. But even this program disadvantaged minority homeowners due to historical redlining practices[ii] (see Adams 2013).

Local Rebuilding Efforts

City Mayor, Ray Nagin, assembled the Bring New Orleans Back (BNOB) commission on January 11, 2006. The commission concentrated on recreating the city with a smaller, more manageable footprint. Green spaces were to replace flooded areas and a complete reorganization of the public school system, a 53-mile light rail, and a new jazz district in the French Quarter were also in the queue. Residents protested the commission's plan since it did not support the efforts of those people in flood zones who wanted to rebuild and did not include plans for rebuilding key public infrastructure such as transportation, medical facilities, or schools in neighborhoods hit hardest by the storm. It favored rebuilding on higher ground that experienced

little to no flooding—ground owned by wealthier white New Orleanians. Journalist, Kate Randall (2006), argued the plan was "a calculated and cruel scheme to permanently depopulate middle- and low-income areas of the city and rebuild only the wealthy areas." The local newspaper, Times-Picayune, condemned the commission's "Plan for the Future" the day it was unveiled (Figure 1).

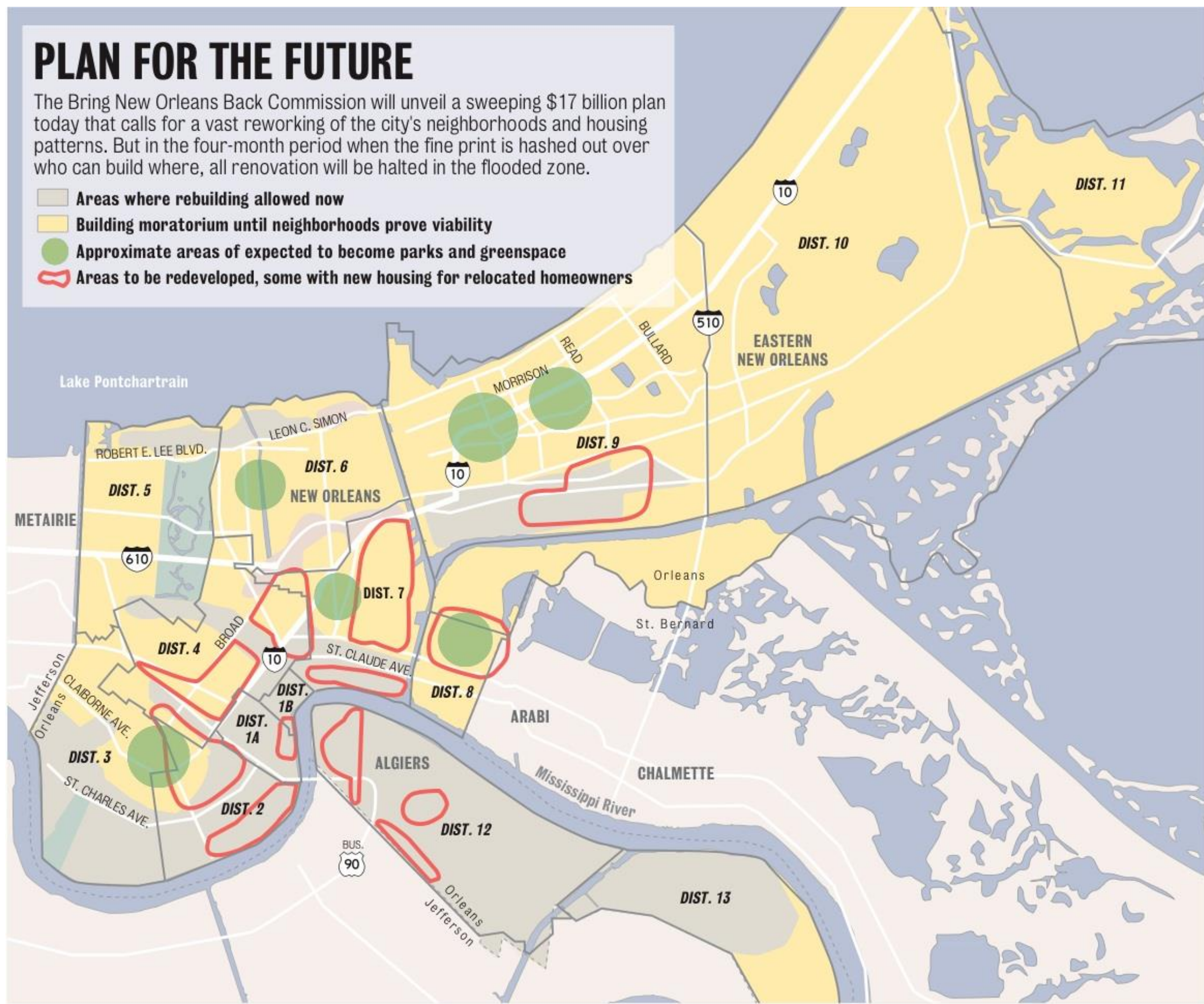

Figure 1. "Plan for the Future," a graphic published by the *Times-Picayune* citing its source as the Bring New Orleans Back Commission

The City of New Orleans Neighborhoods Rebuilding Plan—or Lambert Plan—received early support by residents who believed this city council led initiative would help to restore the hardest hit areas. This plan placed human security issues and the right to return at the forefront of rebuilding efforts. While members of Congress and the Urban Land Institute advocated against investing in these areas, the city council held forums for displaced New Orleanians in Baton Rouge, Atlanta, and Houston. Planners also met with people in their homes, on the streets, and in community centers in an effort to understand residential needs and to build trust with locals (Reese 2014). Unfortunately, despite these planner-community meetings, official city developers invested money in the wealthier, less vulnerable areas of the city—those that did not need the costly flood protection infrastructure and assistance in renovating damaged homes. Poor and black neighborhoods with high numbers of single mother households were left to recover on their own.

The Unified New Orleans Plan (UNOP) of 2007 was an attempt to provide a concrete vision for the entire city, streamlining community demands gathered from the Lambert Plan and bringing together the work of different planners. The plan required $14.3 billion for rebuilding, and despite its best efforts was vague. After eighteen months of planning, the UNOP committee had no timelines, no priorities, and no budget (Boyer 2014). While the UNOP was developed, the director of the Office of Recovery Management released his own plan for hubs of commercial development and Mayor Nagin proposed a riverfront improvement project to attract wealthier people back to the city (ibid.). In 2008, the New Orleans City Council proposed an amendment to give legal status to voter-approved plans. The amendment passed, and in 2010, "A Plan for the 21st Century: New Orleans 2030" was established. Yet it remains to be seen how this democratically produced plan will develop and affect the city.

As the years have gone on, post-Katrina New Orleanians are experiencing a sort of plan fatigue (Reese et al. 2014), with locals growing cynical about the bureaucratic process of implementing successful rebuilding policies; others have not returned. Taking an intersectional approach to considering both those who have returned to the city and those who have settled elsewhere, we assert that it is no coincidence that the "New" New Orleans is whiter, wealthier, and older. The uncertainty of planning in New Orleans, the lack of infrastructure and public services, and rising housing costs have made it especially difficult for poor families to return. Female headed households were much less likely than other families to return due to the added financial vulnerability of returning to a city with few jobs or services for children (Willinger and Gerson 2008; Willinger and Knight 2012). This means that as scholars and activists lament the loss of a poor black local population in New Orleans, this loss has been greater for predominantly poor black women (Barber and Deitz 2015).

In the following pages, we map demographic shifts in New Orleans, comparing race, gender, class, as well as other variables to better understand what the city looked like before Hurricane Katrina, who was hardest hit by the floodwater and lack of rebuilding support, and ultimately who has not returned home. These data help us to understand what the contemporary, post-Katrina planning and redevelopment processes has meant for New Orleans, and how it has so far structured the city. We especially highlight the changes that have occurred for vulnerable female populations who were most severely affected by the storm and, as we argue elsewhere (Barber and Deitz 2015), have been forgotten in the recovery process.

Mapping

In the following analysis, we use Geographic Informational System (GIS) mapping to pattern settlement and population loss in New Orleans, and to understand how these patterns represent race, gender, and class biases in post-Katrina rebuilding efforts. Mapping helps us to show clearly the social geography of population change, and allows scholars from various methodological and disciplinary backgrounds to see how the city was rebuilt and repopulated in a way that did not equally serve all groups. To create these maps, we draw data from the 2013 American Community Survey (ACS) 5-year estimates, National Historic Geographic Information System map boundary files, 2000 Decennial Census, 2010 Decennial Census, and the New Orleans Data Center's "Neighborhood Statistical Area Data Profiles." These data, from before and after Hurricane Katrina, show overall population and racial changes, as well as changes in the distribution of impoverished populations, neighborhood housing costs, and certain subgroups of women including single parents, the elderly, and those in typically insecure work sectors.

The federal government runs the annual American Community Survey in an effort to give communities current information on demographic and economic characteristics at both the local and national levels. The ACS provides 1-year, 3-year, and 5-year estimates. We use the 5-year estimates released in 2013, which include 60 months (2008-2012) of data at multiple geographic scales, have the largest sample size, and are most reliable. The decennial census is a more comprehensive but costly endeavor and is conducted every ten years. The decennial census surveys the entire U.S. population, and measures basic demographic and economic characteristics, including race, income, family type, and age among other things. We draw data from the 2000 and, to a lesser extent, the 2010 census.

The National Historic Geographic Information System, a program of the Minnesota Population Center, provides map boundary files that best fit each decennial census. For this analysis, we used 2000 and 2010 Orleans Parish tract boundary images. These boundary files were easily aggregated into neighborhoods using map data provided by the New Orleans Data Center.

A few considerations were made to most accurately compare data from two different years in an area radically changed politically, socially, and geographically. First, we conducted this analysis at the neighborhood level – both because neighborhood statistical areas had already been created by the New Orleans Data Center with pre- and post-Katrina analyses in mind and because neighborhood names are familiar both to residents and outsiders (unlike tracts or block groups). Second, we adjusted monetary values for inflation to their 2012 equivalents.

In total 72 neighborhoods in Orleans Parish were mapped (see Figure 2). Our variables of interest were based on the literature on disaster vulnerability and overall social vulnerability. The final variables included in these analyses measured total population, race, poverty rate, average household income, average rental cost, average house cost, percentage of renters paying 30% of their income or more on rent,[iii] female employment status, female occupation, female headed households (including by poverty and presence of children), and number of elderly females (including poverty). We calculated population change variables by finding the difference between 2000 and 2013 population counts and dividing the difference by the 2000 population. This allowed us some comparison of population changes across years, variables, and neighborhoods. These data, juxtaposed against overall neighborhood population gains and losses, help us to visualize how neighborhoods or communities have changed in the “New” New Orleans.

Figure 2. Study area, Orleans Parish (Google Maps 2015)

Visualizing Change in New Orleans

In the aftermath of Hurricane Katrina, local newspapers published maps based primarily on FEMA data as a way to communicate complex information about storm damage and recovery to the general public (Fontenot and Rosenzweig 2014). These data, while documenting the ongoing transformations of the city, did not delve into systematic issues such as racial segregation, infrastructure, or ecology. Our goal here is to contextualize demographic shifts in New Orleans' neighborhoods since Hurricane Katrina. Much like the historical settlement patterns that ghettoized poor African Americans in low-lying areas, contemporary renewal and rebuilding planning after Katrina has altered the demographic landscape of New Orleans by design. These maps reflect urban renewal and rebuilding processes that have pushed out already marginalized groups and altered the unequal settlement of different populations. Past work has established that vulnerable populations, including poor minorities, have been slow to return

home or have settled elsewhere. Even so, too little has been done to understand how those with marginalized race, class, or gender identities are more severely impacted by disaster, design, and recovery. In this section, we explore overall demographic change in the neighborhoods of Orleans Parish—to evaluate transformation of these different communities—while paying particular attention to the especially at risk populations of poor, black, women, and single mothers.

As we discuss above, perceptions about land risk and desirability have long impacted property value, settlement, and segregation in New Orleans. Wealthier and often white populations settled in higher elevated areas; Figure 3 shows the topographical elevations of the city in 2003 (left image) and the depth of flooding after Hurricane Katrina (right image). Areas shaded orange in the flood extent map were covered in 8-12 feet of water. If these maps are compared to Figures 5 and 7, we can observe some evidence of flood patterns that mimic historically racial and economic segregation informed by land desirability. Further, Figure 4 indicates that flood damage from Hurricane Katrina did not directly determine rates of population loss – some areas with little damage, such as the B.W. Cooper Housing Development, lost most of their populations due to design and recovery decisions[iv].

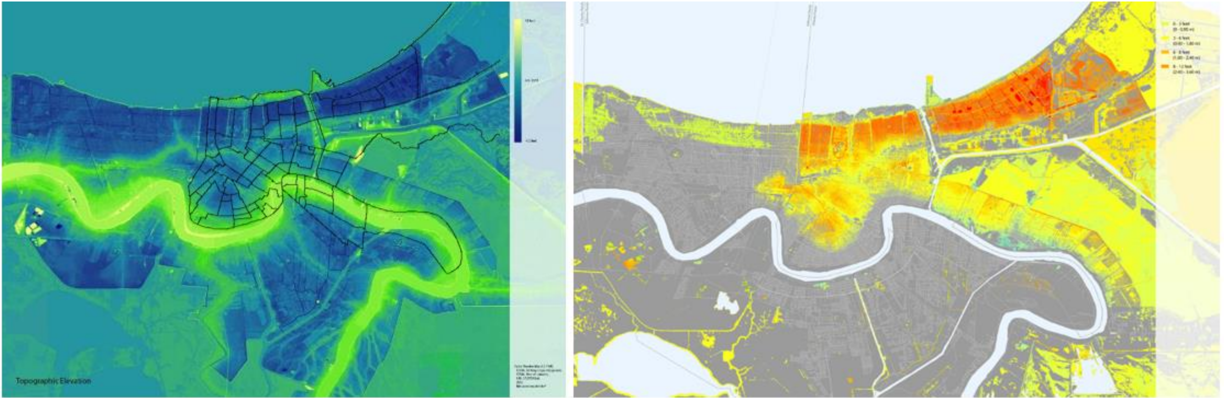

Figure 3. Topographic elevation of New Orleans and flood extent[1] (Fontenot and Rosenzweig 2014)

Compared to 2000, the 2013 Orleans Parish population shrunk by 34.5%. It had also become slightly older (with an average increase of 2.2 years), and whiter (34% versus 25% in 2000). Notably, while the median individual income has stayed nearly constant ($26,292 to $26,500), the average income has increased 12% ($24,131 to $26,970). This difference between the change in median and mean income indicates that income inequality has increased—while half the residents have incomes about the same as they did before Katrina,[v] less than half the population have much higher incomes that pull the average up. This is significant since post-Katrina housing costs increased by a factor of about 50% (median monthly rent went from $529 to $765 and median house value went from $122,071 to $183,700), making the city cost-prohibitive for many people who could previously afford to live in the city, or who were just scraping by.

[1] We have overlaid the flood extent with the political boundaries that will be used in the following pages to explore demographic change. This is an approximation to aid the reader in contextualizing the maps that follow.

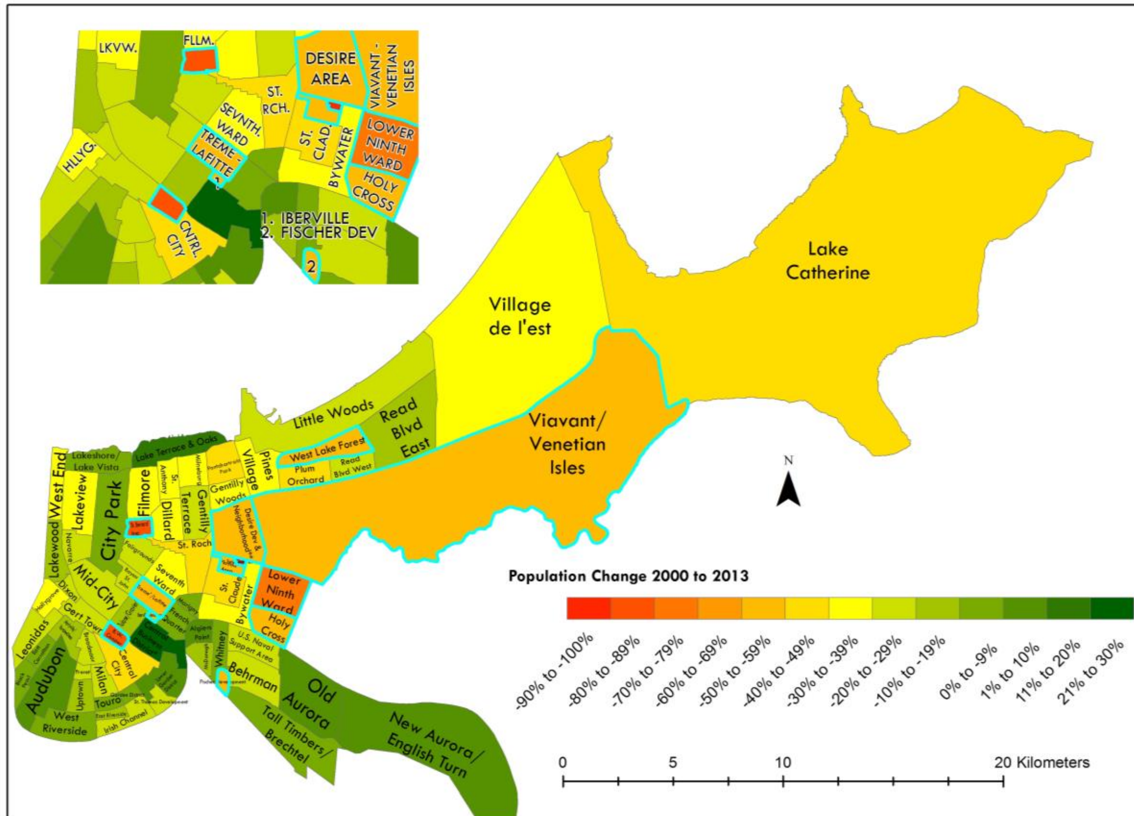

Figure 4. Population Change from 2000 to 2013

Population loss in New Orleans has not been evenly spread throughout the city. While some neighborhoods have lost up to 99.6% of their population, others have grown. In Figure 4, we see that population loss was not in exact accordance with topography or the extent of flooding damage. Notably, many of the most significant population losses are seen in areas with public housing projects before Hurricane Katrina. Areas colored on a spectrum from yellow to red lost more population than the Parish's average, and areas outlined in blue lost more that half of their pre-storm populations. This is especially true for the Florida Housing Development (-99.6%), St. Bernard Area Housing Development (-84.8%), B.W. Cooper Housing Development (-81.4%), Lower 9th Ward (-79.7%), Florida Area (-58.9%), Fischer Housing Development (-58.3%), West Lake Forest (-55.4%), Vivant-Venetian Isles (-55%), Desire Area

(-55%), Sixth Ward-Treme-Lafitte (-53%), Iberville Housing Development (-51.3%), and Holy Cross (-50.7%) neighborhoods (these neighborhoods appear at the top left of Figure 4). Loss in these neighborhoods has in many cases not been due to housing damage, but rather due to the mass reorganization of public housing in the city[vi]. Figure 4 explains in part the difficulty poor residents have had in returning—since many of these neighborhoods contained low-income housing projects that have since been destroyed or stand empty despite public protest and international condemnation.

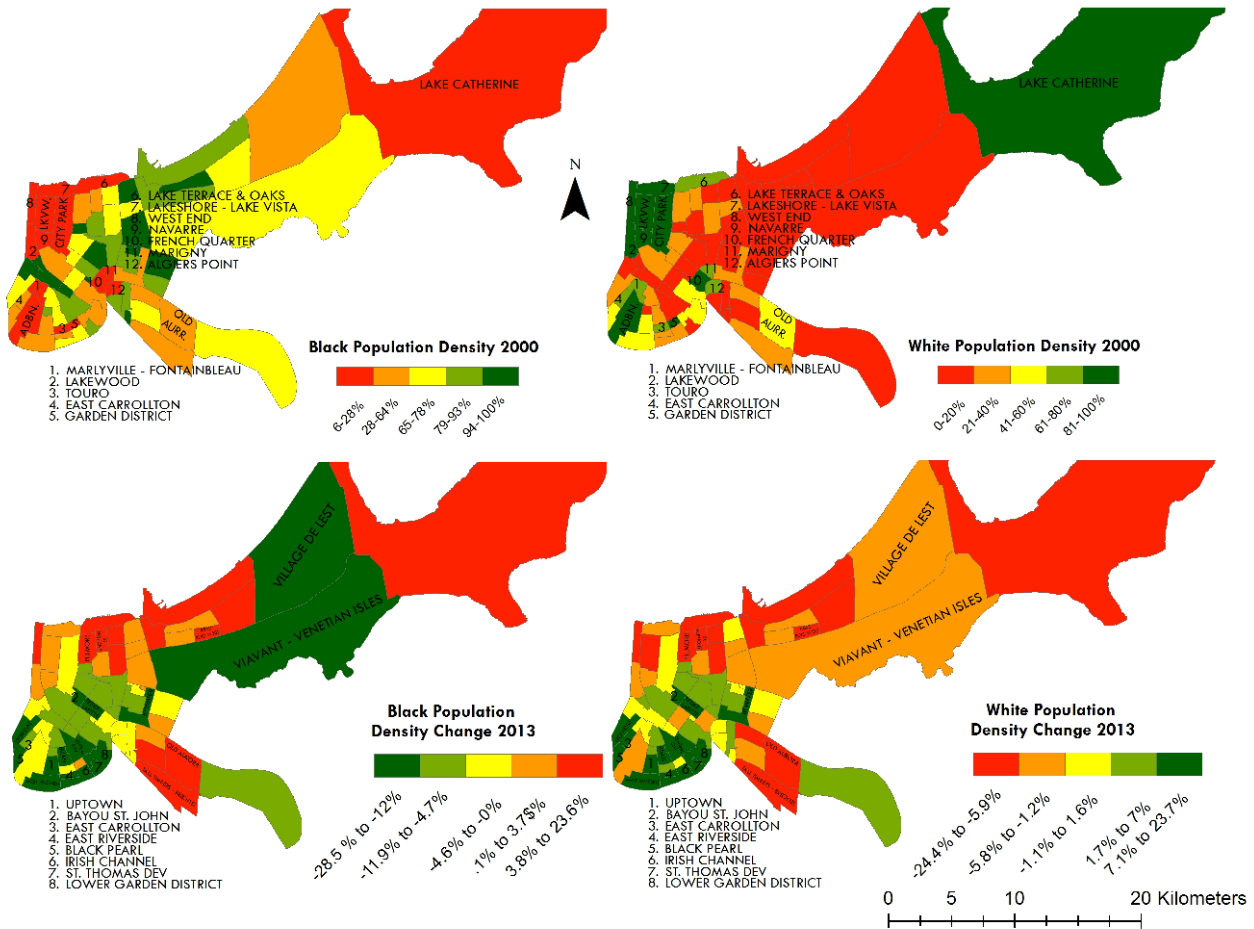

Figure 5. Black and white population density (2000) and quantile population change

In New Orleans before Katrina, the poorest areas were occupied by African-Americans. For example, the Florida Area, St. Bernard, and B.W. Cooper – neighborhoods that saw the greatest population loss post-Katrina – were over 80% African-American in 2000. In Orleans Parish as a whole in 2013, 34.5% of the African-American population had been lost, 11.7% of the white population, and the population of other races had increased 8%. The representation of people who identify as two or more races had decreased 13% from population counts in 2000. In 2013, 34% of the city's population was white compared to 25% in 2000. But becoming whiter does not mean the city became more racially integrated. New Orleans was segregated by neighborhood in 2000 (or as Pardee (2014) says, "hyper-segregated")—revealing historical trends in discrimination and settlement patterns—and remains so today. Today's segregation continues to reflect land desirability trends and uneven investment in communities where poor and often black neighborhoods are not being rebuilt. Particularly, new mixed use housing in place of large public housing complexes, replace only a fraction of the affordable housing units. Figure 5 displays how neighborhoods with high population density of African Americans had low white populations and vice versa in 2000 and 2010. After Katrina, neighborhoods with large black populations still had few white residents, but the number of neighborhoods with predominately black populations had greatly decreased.

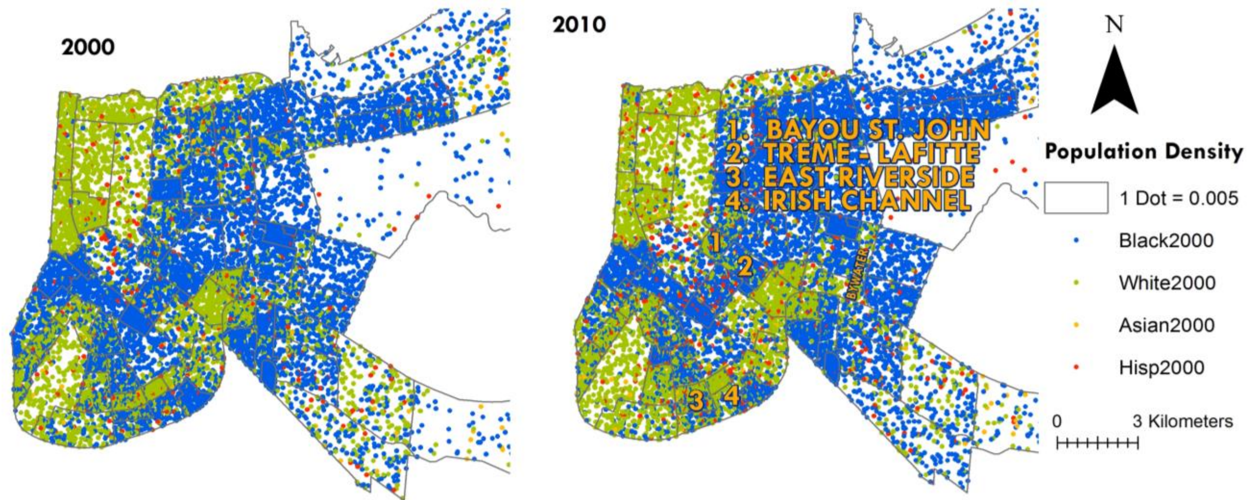

Figure 6. Racial geography of New Orleans

Figure 6 shows the slight yet noteworthy reorganization of racial settlement that has taken place post-Katrina. A larger white population now occupies many pre-Katrina areas that were once mainly African American. This is especially the case in the higher-elevation neighborhoods that did not experience much flooding or areas close to the Central Business District. The five neighborhoods with the greatest African American population density loss in fact show the greatest white population density growth. These neighborhoods – which also saw a lot of attention by policy planners and rebuilding monies post-Katrina - are labeled in orange in Figure 6. The population density of African Americans in the Irish Channel neighborhood decreased the most (-28.5%), while the density of whites in the same neighborhood saw a staggering 23.2% increase. The Bywater neighborhood, previously known as the Upper 9th Ward, saw the black population density decrease 27.8% while the white density increased 23.7%. East Riverside had a 22.5% decrease in black population density and a 19.1% increase in white population density. The Bayou St. John and Treme/Lafitte neighborhoods also saw

significant losses in black population density (18.8% and 17.9% respectively) alongside increases in the density of whites (14.8% and 12.5% respectively).

Figure 7. Gentrification of St. Roch

Most recently, the St. Roch neighborhood has begun to gentrify in earnest, and has consequently attracted media attention and local push-back. While St. Roch is maybe the most recent neighborhood to experience the encroachment of gentrification it is not the first (see Campanella 2008). In May 2015 there was an influx of vandalism in the area with broken windows, and spray painted messages such as “yuppy=bad” (Webster 2015). In 2013 the neighborhood had seen a 4.7% decrease in black population (from 92% in 2000 to 87% in 2013), alongside a 3% increase in the white population. This pattern has accelerated in the past few years with residents creeping over from the Marigny neighborhood and even attempting to rebrand the neighborhood as “New Marigny” (see Figure 7).

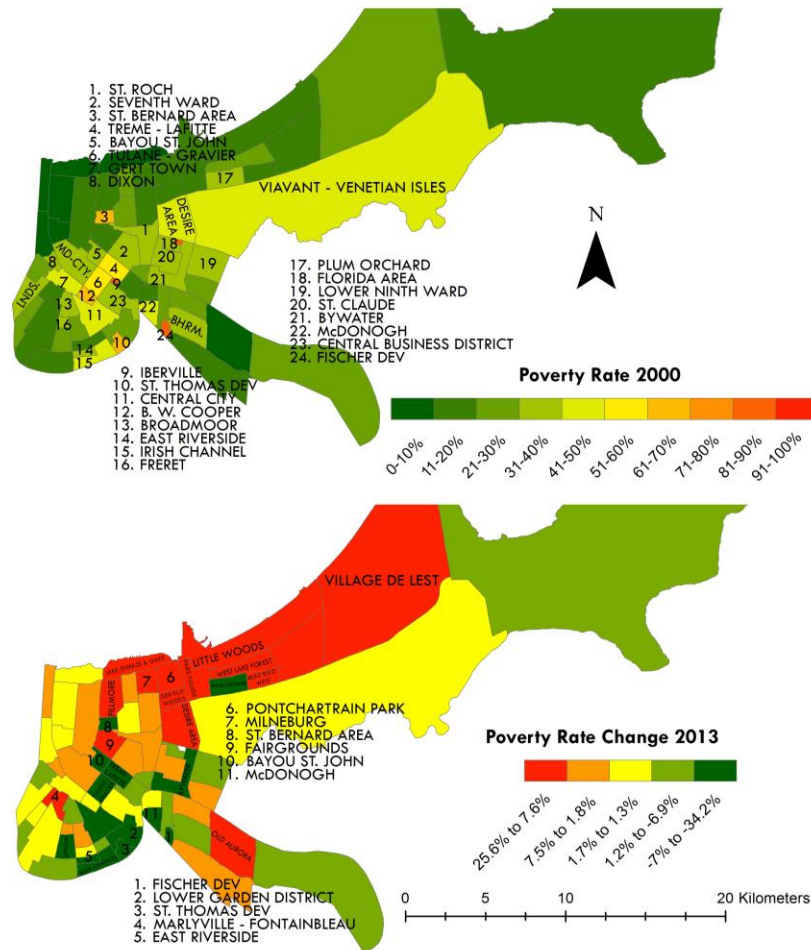

Figure 8. Poverty in New Orleans

In 2000, 24% of the Orleans Parish population lived below the poverty line ($17,050 for a family of four), and in 2013 that factor increased to 26%. This is compared to a national average of 15.4%, 27.1% for African Americans and 30.6% for single mothers. Before Katrina, in 2000, the greatest levels of poverty were in Fischer Development (88.2%), Iberville Development (84.2%), Florida Development (79.6%), B.W. Cooper (69.2%), St. Thomas Development (69.1%), and St. Bernard Area (66%). Except for the St. Thomas Development, all of these neighborhoods lost over half of their populations—the Florida Development, B.W. Cooper, and the St. Bernard Area saw over 80% population loss. As mentioned above, this loss

in population was largely due to the razing of public housing projects, and a general lack of infrastructure for the poor post-Katrina. These trends suggest the city avoided rebuilding these poor neighborhoods or otherwise made it difficult for the poor to return. One of New Orleans' biggest developers and a member of the city's rebuilding commission was quoted just after the storm saying, "As a practical matter, these poor folks don't have the resources to go back to our city just like they didn't have the resources to get out of our city. So we won't get all those folks back. That's just a fact. It's not what I want, it's just a fact" (AP 2005). This sentiment was expressed by other planners and stakeholders throughout the rebuilding process – the actions taken to rebuild the city suggest more explicitly how these sentiments motivated the process. And so, New Orleans has become a city largely repopulated only by those with the "resources" to return.

As noted above, the median household income in Orleans Parish remained about the same (0.1% increase), while the average income increased 12%. The rise in average income, slight increase in poverty rate, and a stagnant median income suggests growing income inequality in the area. Since poverty is a fluid state we cannot say for sure whether changes in poverty rates are due to loss of certain populations or the same population moving in and out of poverty. The overall population loss in the poorest neighborhoods (mentioned above) seems to clearly suggest that a lack of infrastructure and the reorganization of public housing have kept the poor from returning to New Orleans. Most of the poor are now found in areas more on the periphery of New Orleans – for example, Pontchartrain Park (a neighborhood that remains over 95% black) has seen the poverty rate increase from 10% to 36%. On the opposite end of the spectrum, the poverty rate in St. Thomas (bordered by the Garden District) has dropped from 69% to 37%, alongside a drop in the African-American population from 93% to 77%.

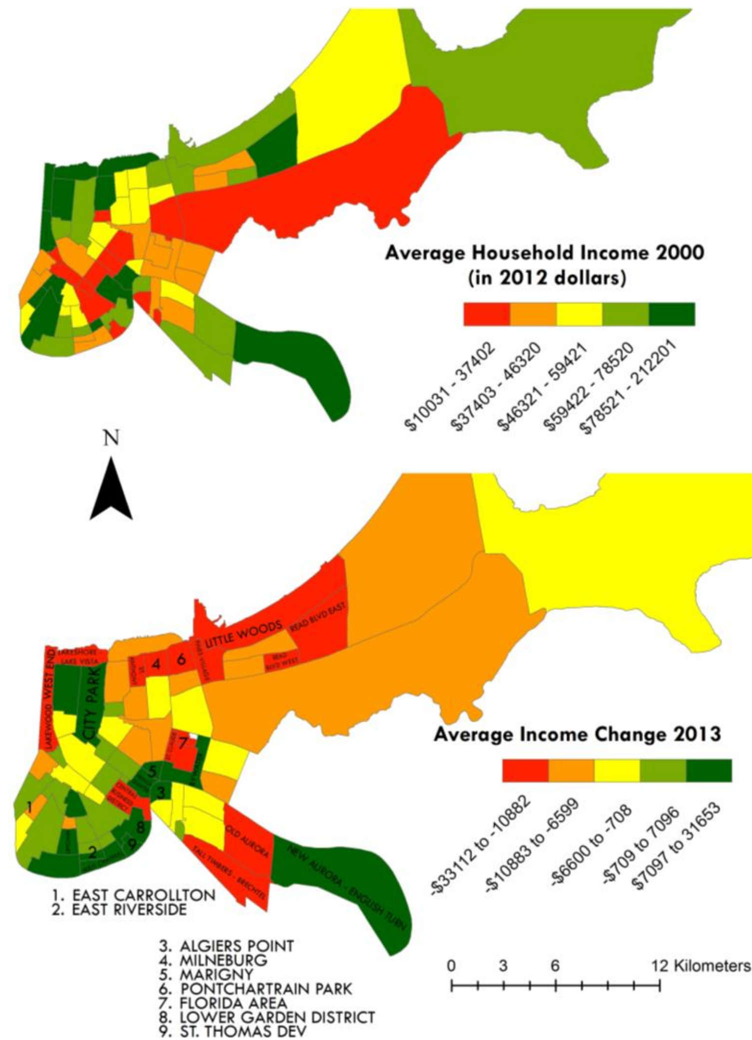

Figure 9. Average income 2000 and average income change, quantiles

While New Orleans suffered from high rates of poverty before Hurricane Katrina, economic neediness and income disparity appear to have become even larger problems post-storm. Figure 9 shows the average income distribution by quantiles. The resemblance between the average income distribution in Figure 9 and the racial distribution in Figure 5 points to racial disparity in the city—the neighborhoods with the top quantile of average household income are also predominantly white. For example, in Lakewood, where the population was 88.7% white in 2013, the average household income was $179,089—the next highest average income is nearly

$36,000 less in Audubon ($153,702). The average household income in the poorest neighborhoods, Iberville Development and B.W. Cooper, is a small fraction of what it is in the wealthiest neighborhoods ($11,652 and $16,131 respectively). The two neighborhoods with the lowest average income are also over 90% African American while both neighborhoods with the highest income are predominantly white. Further, as discussed above, *geographic* patterns of income increases and decreases can be seen within areas on the outskirts of the city seeing greater income declines. This may in part have to do with the level of investment in areas closer to the city compared to those on the outskirts.

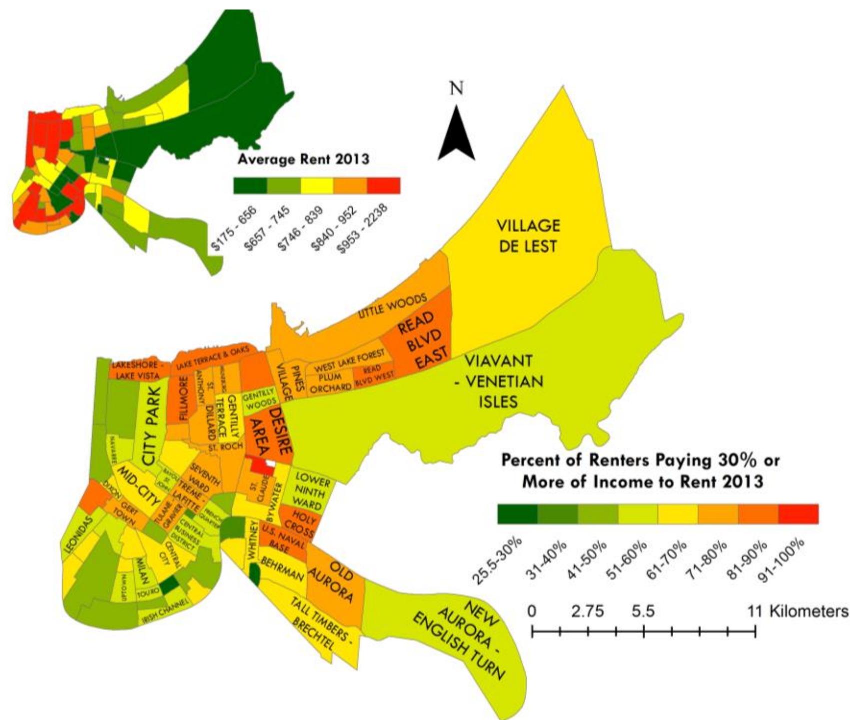

Figure 10. Average rent and percentage of renters paying 30% or more of their income towards rent (2013)

At the same time that some New Orleanians are seeing higher rates of income, with more wealthy and predominately white populations moving into the city, housing prices have

skyrocketed—especially in areas that saw minimal flood damage, where landlords could demand exorbitant rents for dilapidated domiciles (Webster 2014). This creates a sometimes impossible financial burden for low income New Orleanians who remain or return. Orleans Parish saw a median rent price of $529 in 2000 and a median house value of $122,071. In 2013, 8 years after Hurricane Katrina, the median rent had risen 44.6% to $765, and the median house value had increased 50.5% to $183,700. In Figure 10, we see that the lowest average rent in 2013 was $175 in the Iberville Development, a housing project in Mid-City New Orleans built in the 1940s. In addition to Iberville, there are only three other neighborhoods with rents under $500: B.W. Cooper ($310), Fischer Development ($333), and the Desire Area ($364). Fifty-percent of the neighborhoods in New Orleans now have average rent prices over $775, with the top 11 exceeding $1,000 and in the most extreme case $2,238 (Lakewood). Housing costs in post-Katrina New Orleans are prohibitively expensive for people with unstable jobs and low incomes to live in the city. Nicolai Ouroussoff (2006), an architectural critic for the *New York Times*, called the reorganization of public housing in New Orleans after Katrina, "one of the most aggressive works of social engineering in America since the postwar boom of the 1950s." This "social engineering" is obvious if we look at the locations in Orleans Parish were rents might still be affordable – these areas are at the outskirts of town in neighborhoods that saw heavy Katrina flooding. While Katrina revealed something about the ghettoization and vulnerability of minorities and the poor in Americas cities, some might argue that the city has been rebuilt with even greater ghettoization of poor minorities.

Figure 10 also shows that in 2013, the majority of residents in 59 of the 72 New Orleans' neighborhoods were spending 30% or more of their incomes on rent (severe housing-cost burden). Those who spend over 30% of their income on rent are both very poor and very

wealthy. For example, in the Florida Area, 95% of the residents spent over 30% of their incomes on rent and 30% lived below the poverty line, while in Lakeshore 88% had a severe housing-cost burden and only 4% lived below the poverty line. For the wealthy, spending over 30% of one's income on rent may be a lifestyle choice, but for the poor this means an inability to buy other necessities such as food.

Race and class are salient variables in scholarly work on Hurricane Katrina; gender, however, has received much less attention (see Barber and Deitz 2015; David and Enarson 2012; Pardee 2014; Tobin-Gurley and Peek 2010). But it is significant that over 50% of those families that had lived in New Orleans' now demolished projects, were headed by a single mother with children under 18. Specifically, in 2000, 69% of the families in the Florida Development were headed by a single-mother with kids, 68% in Iberville, and 63% in the Fischer Development. Overlooking gender means overlooking some of the most, and uniquely, vulnerable people and families. In the following analysis, we use measures of vulnerability established in the literature (see Enarson 2012) to begin to understand the uneven settlement and population loss of women. Between 2000 and 2013, Orleans Parish lost more than average (-34.5%) amounts of the following populations: women aged 65 or older in poverty (-40%), female headed households with children (-41%), female headed households with children in poverty (-40%), female headed households living in rental units (-37.2%), and women employed in nontraditional labor occupations (-37%). At the same time, the Parish lost a less than average amount of women in poverty (-29%), employed women (-26%), women employed in management and professional occupations (-3%), women employed in service occupations (-16%), and unemployed women (3% increase). These demographic patterns have not occurred at random, but rather, are the

result of rebuilding efforts that overlooked and at worst excluded certain populations from returning to and thriving in New Orleans.

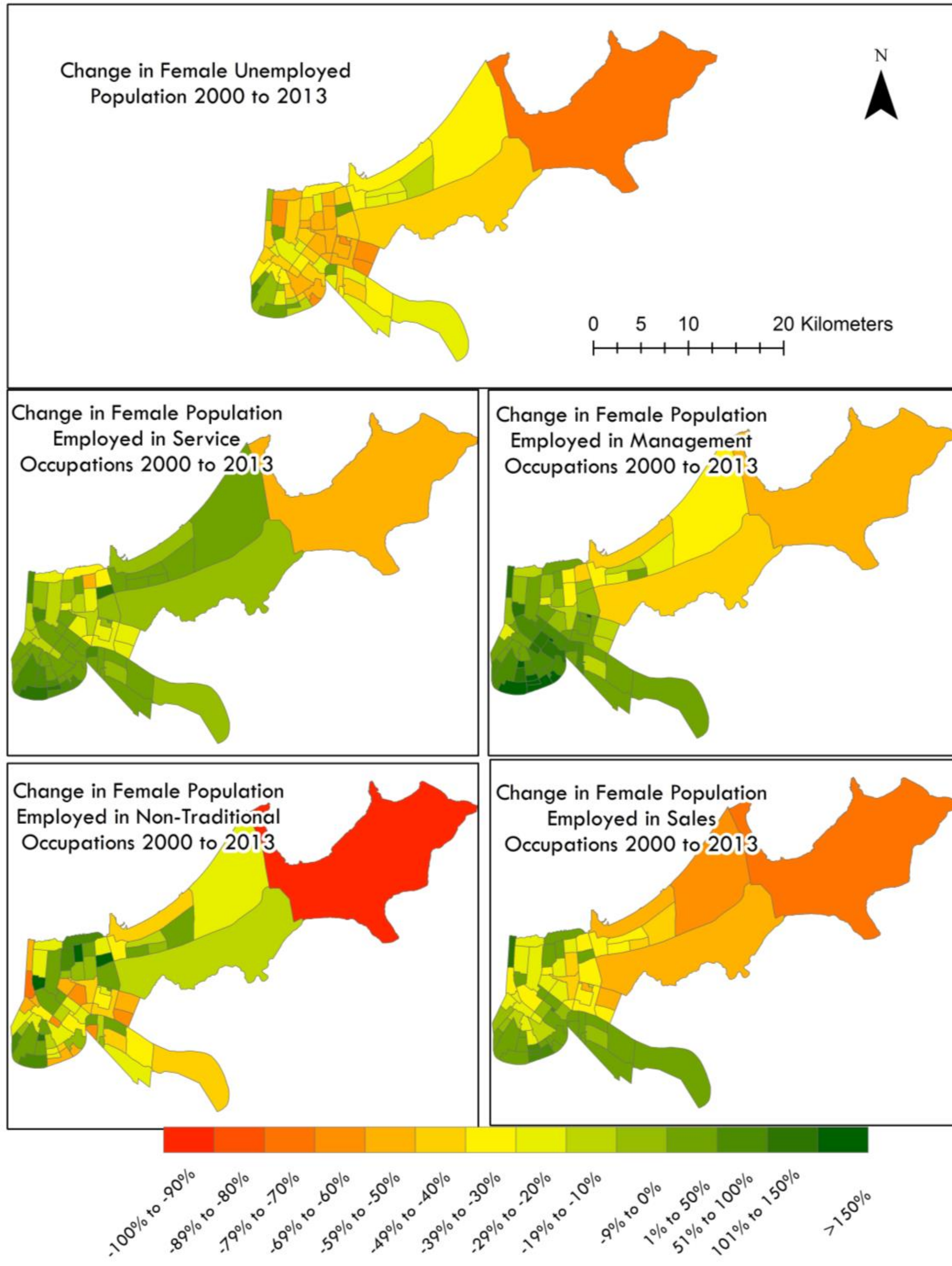

Figure 11. Change in female employment and occupation

Figure 11 shows that rates of women's unemployment have changed by neighborhood. Despite an overall decrease in the population in New Orleans, the actual number of unemployed women has increased. As with poverty, unemployment is a fluid identity and losses and gains in the unemployed population could mean a variety of things. For example, in the Black Pearl neighborhood the number of unemployed females has increased 66%, while in this neighborhood the overall population loss has been minor (2%), the poverty rate has decreased (26% to 20%), and the black population has decreased (37% to 22%). The trends in Black Pearl suggest that new populations live there now and unemployment may not lead to severe financial burden. On the other hand, in Gentilly Woods, 36% of the population has been lost while the number of unemployed women has increased 47%, the poverty rate in this neighborhood has increased from 14% to 24% and the percentage of the population that is black has stayed constant (68% to 69%). With the increased poverty rate in Gentilly Woods, high unemployment rates might suggest hardship.

Looking at the distribution of women by occupation it is clear that women's employment in service occupations and in management near the Central Business District has increased. A decrease in women employed in sales has been seen in almost every neighborhood, accompanied by a decrease in women employed in non-traditional occupations. These trends are in line with lower employment rates in general but have significance for single mother families that make up 38% of New Orleans' families. Poor black single mothers, who were at the greatest risk during Katrina, faced unique barriers to returning home and supporting their families (government support, stable housing, flexible employment, childcare, etc.) making return to the city or their previous quality of life difficult if not impossible.

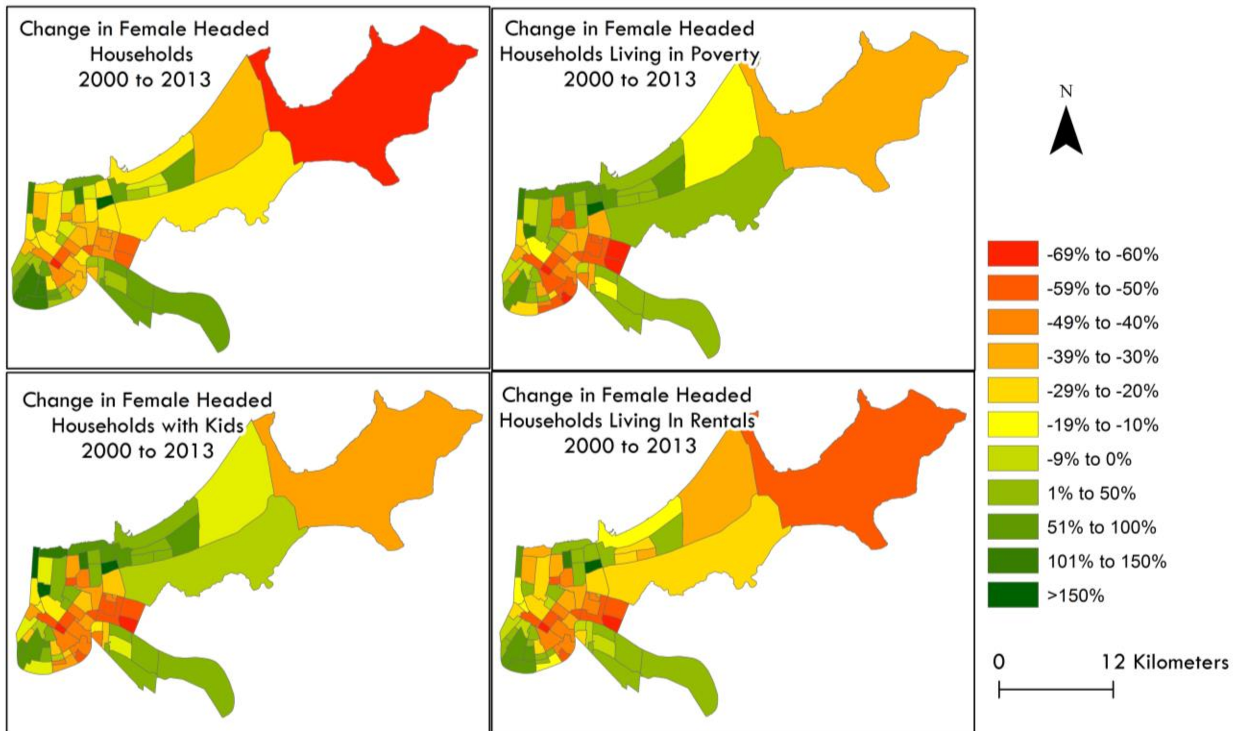

Figure 12. Change in Female Headed Households

As mentioned above, the number of female headed households in New Orleans has decreased 35%. The loss of female headed households with children has been even greater (-40.9%), as has been the number of those families living in poverty (-39.9%). These women are making decisions for their entire families, including children and adult dependents, and so they must consider whether the city can provide the infrastructure necessary to get by including: living wage jobs, schools for children, medical care for kids, transportation, and daycare (Barber and Deitz 2015). Because New Orleans has failed to build infrastructure for the poor, and especially poor families, many women chose not to return. For all family types it is possible to visually observe in Figure 12 that the greatest loss in the aforementioned families has been in the northeast area of the Parish and the mid-south-west. Specifically, Holy Cross (-76%), B.W. Cooper (-73%), Lower 9th Ward (67%), St. Thomas Development (-66%), and St. Bernard Area

(-66%) have seen the greatest loss in female headed families with kids. Nearly all of these areas were over 90% black before Katrina (except Holy Cross 88%), and most had poverty rates around 70% (except Holy Cross 29% and the Lower 9th Ward 36%).

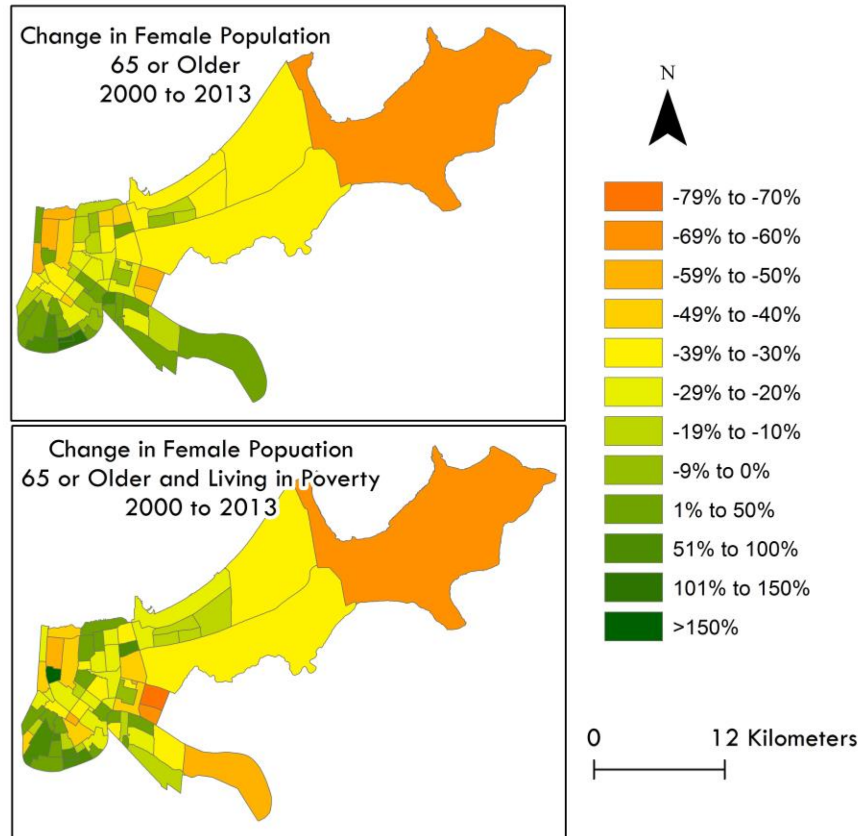

Figure 13. Population change of elderly women

New Orleans has become an older city. East Riverside and the Irish Channel have seen the greatest increase in women over 65 post-Katrina (138% and 119% respectively). These areas have also seen the second and third largest increases in the number of women over 65 living in poverty (East Riverside 95%, Irish Channel 86%). While the female elderly population in the Navarre neighborhood has stayed about the same (7% increase), the population of elderly women in poverty has increased a whopping 185%. Elderly people are vulnerable to weather related

disasters and can face greater hardships in trying to return home and rebuild their lives. And so the increase in the average age of New Orleanians post-Katrina is surprising and suggests there is strong attachment to place for these populations, or perhaps a lack of options, that brings them home.

Overall, New Orleans has become a city where women have lost occupational power or resiliency, there are less female headed households with kids, and the population of women is both older and more vulnerable. The maps above show how these trends vary across neighborhoods. In the context of the history of New Orleans, the rebuilding decisions post-Katrina and the spatial distribution of wealth, race, housing costs, and poverty rates, one can begin to piece together how and why certain populations remain disadvantaged and have been unable to return to the city.

Conclusion

New Orleans suffered great loss after Hurricane Katrina: a loss of lives, infrastructure, homes and businesses, and local populations that were especially vulnerable to the disaster and its aftermath. The geographic design and historical settlement patterns of New Orleans placed minorities, the poor, and disadvantaged single mothers in the lowest lying areas. Mismanaged resources, corrupt profit-taking, conflicts of interest for the stakeholders, and socially unconscious design, however, have helped to rebuild the city, but not without great fiscal irresponsibility and non-inclusive recovery. While billions of dollars have been allocated for the labor of ineffective contractors, little money has been used to rebuild infrastructure, establish services, and open public housing for needier New Orleanians. The marginalization of already vulnerable groups reflects and maintains a historical geographic inequality and at the same time it changes the face of the city and creates gentrification in historically African American

neighborhoods. And so people who had been historically ghettoized into low-lying areas are now being pushed out altogether.

The maps throughout this paper document the results of both the recent history and the distant. This history has created stigmatized zones throughout geographic areas in both a figurative and tangible way. However, it is the diversity of people that made New Orleans the city that it was. As the nation engages again in critical public discussions of identity, culture, and place-making, we should revisit practices that have stigmatized and excluded various populations from their right to a home, a community, or a culture.

Author's Note

We are thankful to Timothy J. Haney for his incisive comments on earlier drafts of this article. We are also grateful to the editors of this journal, Drs. Belkhir and Charlemaine.

Notes

[i] AshBritt had a no-bid $500million contract for debris removal with FEMA but most of the money was lost in a subcontracting pyramid scheme whereby the actual debris-hauler, Les Nirdlinger, from New Jersey ended up doing the work for only 13% of the actual contract award (see Bullard and Wright 2009).

[ii] Over 20,000 black homeowners filed a 2008 class action lawsuit against the program, claiming the policy of determining funds available to homeowners did not account for the systematic low valuing of black neighborhood homes

[iii] Scholars have labeled those with rents or housing costs above 30% of their household income as persons with a housing cost burden. The greater the rate of person with a severe housing cost burden the more that housing costs within an area are cause for concern.

[iv] B.W. Cooper was one of the Big Four housing developments demolished despite minimal flood damage.

[v] Suggested by the median income, which is a midpoint value.

[vi] Before Hurricane Katrina, HUD and HANO officials wished to demolish public housing complexes and rebuild mixed use housing units. The “Big Four” housing developments that were famously demolished were Lafitte, St. Bernard, B.W. Cooper, and C.J. Peete – all of these neighborhoods have seen a loss of population over 50%. Katrina provided the opportunity to speed up the process of reorganizing public housing and in so doing preclude the poorest residents from returning.

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